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ABSTRACT

The Michigan Educational Assessment Program (MEAP) is a statewide testing program in reading and mathematics (with other subject areas tested on a sampling basis). The MEAP tests are administered every fall to all fourth, seventh, and tenth graders. This Handbook was developed to assist educators in analyzing, using, and reporting MEAP test results. It includes a brief overview of the program and description of the MEAP tests, suggested methods, techniques, and strategies for using the results, and a discussion of the appropriate uses of MEAP test results. Also provided is an illustrated explanation of how to read each of the report forms, and explanation of the Proportions Report (Appendix A). The objectives tested, with example test items and a list of item numbers measuring each objective, can be found in Appendix B and Appendix C. Appendix D shows a brochure which has been prepared to describe to a variety of audiences various principles which are highly related to student achievement. A flyer which can be used to help explain the test results to individual students and parents is provided in Appendix E. "Special Notes for Adult Educators" are provided in Appendix F. A list of additional resources can be found in Appendix G. (BW)

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Michigan Educational Assessment Program

Handbook

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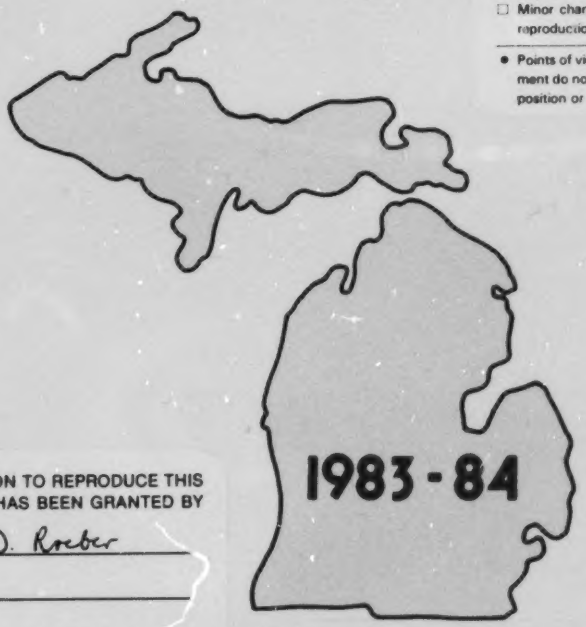

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MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM HANDBOOK

Eugene T. Paslov
Deputy Superintendent
Of Public Instruction

David L. Donovan
Assistant Superintendent
Technical Assistance and Evaluation

Edward D. Roeber
Supervisor
Michigan Educational Assessment Program

Geraldine J. Coleman
Consultant
Michigan Educational Assessment Program

MICHIGAN DEPARTMENT OF EDUCATION

FOREWARD

Improving instruction in Michigan schools is a priority goal of the State Board of Education. The Michigan Educational Assessment Program (MEAP), since January, 1970, has provided information which contributes to the identification of educational needs. A major task of the state assessment and instructional specialist staffs is to assist and encourage local educators to use the information provided to improve instruction. However, local educators hold the key to achieving the goal of improving instruction by addressing the needs identified by the assessment.

In previous years, the Department staff has worked cooperatively with local educators in using the MEAP results to meet student needs. As a result, the Department has developed activities to: 1) use MEAP results in schools and 2) report MEAP results to a variety of audiences. These activities were designed to emphasize district/school use and sharing the MEAP test results. Building upon these efforts, the assessment program staff will continue to train local and intermediate district educators in the use and reporting of MEAP results. The instructional specialist staff will continue to train educators in the use of effective instructional strategies and in curriculum review and revision processes.

The MEAP Handbook presents ways to use the MEAP test results. Because these activities are based on methods that worked in schools and because the techniques acknowledge the resource constraints of local schools, they can be used in schools and districts of various sizes and types. Whether they are applied is the choice of local staff.

Learning the basic skills is essential, but not sufficient. Educators must increase efforts to provide a well rounded curriculum, adjusted to specific needs of their community. Challenging the high achieving students is equally as important as motivating the lower achieving students. Basic skills instruction should not take the place of other effective school programs, but rather, should serve as a cornerstone.

Phillip E. Runkel
Superintendent of Public Instruction

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INTRODUCTION

The MEAP Handbook was developed to assist educators in analyzing, using, and reporting Michigan Educational Assessment Program test results.

In 1973-74 the Assessment Program began using an objective-referenced test system keyed to Michigan minimal performance objectives. In 1980-81, revised objectives and tests were introduced to build on the experience of previous years. The annual educational screening provided by MEAP continues to allow local educators to identify which students have acquired basic skills and assess the strengths and weaknesses of their basic skills programs.

The Handbook includes a brief overview of the program and description of the MEAP tests (Section I), suggested methods, techniques, and strategies for using the results (Section II), and a discussion of the appropriate uses of MEAP test results (Section III).

Also provided is an illustrated explanation of how to read each of the report forms, and explanation of the Proportions Report (Appendix A). The objectives tested, with example test items and a list of item numbers measuring each objective, can be found in Appendix B and Appendix C.

As in the past, not all of the minimal performance objectives for reading or mathematics are tested. Appendix B contains only the objectives which are included in the every-pupil portion of the MEAP tests. All the minimal performance objectives for grades one through nine may be found in MINIMAL PERFORMANCE OBJECTIVES FOR COMMUNICATION SKILLS and MINIMAL PERFORMANCE OBJECTIVES FOR MATHEMATICS.

Appendix D shows a brochure which has been prepared to describe to a variety of audiences various principles which are highly related to student achievement. As local educators use assessment results to plan program improvement, they will want to keep these variables in mind.

A flyer, entitled "Understanding and Using the Individual Student Report" is provided in Appendix E. This flyer can be used to help explain the test results to individual students and parents.

"Special Notes for Adult Educators" are provided in Appendix F. These notes highlight the specific sections of the Handbook which will help adult educators read and use their MEAP test results.

Finally, a large number of resources have been developed to help local educators use and report MEAP results. A list of these resources and instructions for ordering them can be found in Appendix G.

SECTION I

AN OVERVIEW

The Michigan Educational Assessment Program (MEAP) is a statewide testing program in reading and mathematics (with other subject areas tested on a sampling basis). MEAP was initiated by the State Board of Education, supported by the Governor and funded by the Legislature.

The MEAP tests are administered every fall to all fourth, seventh, and tenth graders. They provide information on what our students are learning and doing compared with what we want them to know and do.

Background

The first four years of the assessment program (1969-1973) used standardized norm-referenced tests designed to rank students from highest to lowest in each of four subject areas (vocabulary, reading comprehension, English usage, and arithmetic). The information provided by these tests did not adequately serve the purpose of MEAP to provide information on the status and progress of Michigan basic skills education. An alternative method of assessing student achievement was needed.

In the fall of 1971, referent groups were formed to develop specific performance objectives in the basic skills areas. The groups were composed of local, state, and higher education curriculum specialists and teachers from throughout Michigan. Groups submitted draft objectives for statewide review by grade level commissions and the Elementary and Secondary Education Council. The final objectives were approved and adopted by the State Board of Education. Objective-referenced tests were developed by Michigan educators to measure specified basic skills attainment.

When the minimal performance objectives were developed in 1972, no empirical evidence on the objectives was available and Department staff agreed that a periodic review and revision would be needed. Revision of the objectives was undertaken in 1976 with the assistance of the Michigan Council of Teachers of Mathematics (MCTM) and the Michigan Reading Association (MRA). As the sets of skills were reviewed, it became apparent that certain new areas of emphasis (for example, metric measurement) needed to be added and other areas (for example, the difference between inferential and literal comprehension) needed to be clarified. The revised objectives were adopted by the State Board of Education in 1980. The revised sets of objectives represent an extension of the original set based on the experience of using them in the Michigan Educational Assessment Program. The need for revised tests was the direct result of the adoption of the revised objectives.

Test Description

The current assessment tests are objective-referenced sets of items measuring selected minimum performance objectives* in the subject areas of reading and mathematics. Each objective (Appendix B) is measured by a set of three items. Objective attainment is answering correctly at least two of the three items measuring each objective. The untimed tests allow students to work at their own pace.

The tests were written by Michigan educators and field tested twice on a statewide sample of students. Following each tryout, the tests were reviewed and refined. The revised tests were

*Because of testing time limitations, not all of the minimal performance objectives for reading or mathematics are included in the annual educational assessment. All of the minimal performance objectives for grades one through nine may be found in the Minimal Performance Objectives for Communication Skills and Minimal Performance Objectives for Mathematics.

approved by the State Board of Education and administered on a statewide basis in 1980-81.

Both MCTM and MRA helped supervise the test development process and participated in the test review and revision processes, including a review of the 1980-81 statewide tests and results. The 1980-81 test results provided a new baseline to which the 1981-82 and future results can be compared.

Results, as in the past, are reported both in terms of percentage of students attaining each objective and in terms of percent of students falling in each category of achievement.

Shown below are the number of objectives and test items used in the **reading** tests:

	Cognitive Skills (Skill Areas I-V)		Positive Responses to Reading (Skill Area VI)		Related Activities
Grade	Number of Objectives	Number of Test Items	Number of Objectives	Number of Test Items	Number of Test Items
4	25	75	4	12	3
7	23	69	4	12	3
10	24	72	4	12	3

The positive response test items are used to determine the extent to which students read on their own, talk about what they read, or request additional reading materials. The related activities do not measure any specific objectives but are used to determine the amount of time students spend doing homework, watching television, and reading just for fun. Because these items are affective in nature, they are listed separately here and are not included in the proportions data. Objective attainment rates for the positive response items are calculated and reported on the District and School Summary.

The number of **mathematics** objectives and test items tested at each level are shown below:

	Core Test		Correlated Tests	
Grade	Number of Objectives	Number of Test Items	Number of Objectives	Number of Test Items
4	28	84	7	21
7	28	84	7	21
10	28	84	7	21

The mathematics tests are comprised of a core test of 28 objectives and a correlated test. Each grade level contains seven correlated objectives.

Individual student, classroom, school, and district results are calculated for each objective in the core test and in the correlated test. This provides districts with information on additional mathematics objectives and gives them more data with which to examine their instructional programs. Proportions data are calculated using the **core** objectives only; correlated objectives are not included. Statewide results are calculated for each objective in the core test and in the correlated tests.

The Technical Report provides more detail on the characteristics of the tests. Table I shows the skill areas tested in each of the mathematics and reading tests.

TABLE I

MEAP: THE SKILL AREAS ASSESSED

		GRADE FOUR		GRADE SEVEN		GRADE TEN	
		SKILL AREA	NO. OF OBJECTIVES	SKILL AREA	NO. OF OBJECTIVES	SKILL AREA	NO. OF OBJECTIVES
READING TEST		Vocabulary Meaning	6	Vocabulary Meaning	5	Vocabulary	5
		Literal Comprehension	5	Literal Comprehension	5	Literal Comprehension	5
		Inferential Comprehension	9	Inferential Comprehension	7	Inferential Comprehension	8
		Critical Reading Skills	1	Critical Reading Skills	2	Critical Reading Skills	3
		Related Study Skills	4	Related Study Skills	4	Related Study Skills	3
		Sub-Total	25	Sub-Total	23	Sub-Total	24
		Positive Response/Reading*	4	Positive Response/Reading*	4	Positive Response/Reading*	4
MATHEMATICS TEST	CORE	Numeration	9	Numeration	2	Whole Numbers	2
		Whole Numbers	12	Whole Numbers	8	Decimals	6
		Fractions	2	Decimals	3	Fractions	8
		Metric Measurement	2	Fractions	6	Ratio, Proportions & Percent	2
		Non-Metric Measurement	1	Metric Measurement	4	Metric Measurement	2
		Geometry	2	Non-Metric Measurement	2	Non-Metric Measurement	3
		Sub-Total	28	Geometry	2	Geometry	1
				Probability & Statistics	1	Probability & Statistics	2
				Sub-Total	28	Equations, Expressions & Graphs	2
						Sub-Total	28
	CORRELATES*	Numeration	1	Numeration	1	Whole Numbers	1
		Whole Numbers	5	Whole Numbers	2	Decimals	3
		Geometry	1	Decimals	2	Proportions	2
		Sub-Total	7	Fractions	1	Metric Measurement	1
				Metric Measurement	1	Sub-Total	7
				Sub-Total	7		

*Attainments on the Reading Positive Response objectives and the Mathematics correlated objectives are not included in the Proportions Report.

SECTION II

USING MEAP TEST RESULTS

In this section, a number of suggestions will be given concerning the uses of MEAP results. For the sake of convenience, these uses have been grouped at the district, school, and individual student levels. This arbitrary means of subdividing a coordinated school district and building effort to use the tests results was adopted to point out the different responsibilities of district-level, school-level, and classroom personnel. Several monographs have been developed to assist local educators. The first monograph describes the relationship between the use and the reporting of MEAP test results and provides an overview of the topics covered by the remaining monographs. The next two monographs provide processes for using MEAP results with individual students and for curriculum review. The last three monographs give models for reporting MEAP results to parents, local school boards, and the public through use of the media.

DISTRICT LEVEL USE

What Should Be Done?

District officials should

- Provide leadership and direction to the staff;
- Interpret MEAP test results as they relate to the total district program; and
- Communicate results in this context to the school board and the community at large.

Why?

- The interest of district-level administrators and curriculum specialists will encourage building-level administrators and teachers to use assessment results.
- The importance of interpretation cannot be overemphasized. The educational assessment program provides a large amount of information. Teachers, principals, and other district personnel should reach an understanding of what the assessment data means to them. In the absence of an "official" interpretation, newspaper reporters, citizens, parents, or students will provide their own meanings of the data. If these interpretations are improper or based on limited information, they may be difficult for school personnel to correct.
- The manner in which MEAP test results are shared by district officials will have a significant impact on the overall usefulness of the results. **Act, don't react.**

How Is Leadership And Direction Provided To Staff?

- Distribute school level assessment results to school staff promptly.
- Hold one or more briefings for central office staff and school staff to present and discuss results in detail. Emphasize what has been accomplished and what should be addressed.
  - In larger districts, it may be useful to hold school-by-school briefings for entire professional staff during which district and the specific school results are discussed. What the district plans to do with the results and expects the school to do should also be communicated.
- Encourage school staff to use school level MEAP results and to distribute the Pamphlet for Parents.

How Can Results Be Related To Total Program?

- Examine district MEAP results to determine how students performed.
- Examine and compare the results of other district-level measures of achievement.
- Prepare a written report which includes the complete assessment results. Highlight both the strengths and weaknesses. The report should also include interpretations, implications, and the plan of action. Make the report available to anyone who wants to understand or analyze the MEAP results in depth.
- Prepare a presentation which gives the total picture of the district's instructional and evaluation programs showing MEAP within the context of other testing done in the district.

How Should Meap Test Results Be Communicated To Various Audiences?

- Determine the audiences to whom the information should be communicated and what they would be most interested in knowing. These audiences will probably include administration and school staffs, parents, media representatives, and the community at large.
- Adjust the emphasis, length, and content of the presentation to make it meaningful and clear to the audience being addressed.
- For the school board:
  - * The board will want to be shown the strengths and weaknesses in overall student performance. The district can present the objective by objective results contained in the District Summary, highlighting strengths and weaknesses.
  - * As areas for improvement are identified, preliminary plans for correcting deficiencies should be presented. The board can then identify priority areas and consider possible reallocations of district resources.
  - * Plan and adapt your board presentation accordingly.
- For the community at large:
  - * Capitalize on public interest—past experience has shown that the public reporting of MEAP test results generates a lot of interest. Take advantage of this excellent opportunity to improve public relations.
  - * **Act, don't react**—release MEAP test results promptly and in the context of your total school program. Report early, report honestly, report fully, and provide information about what the district/school is doing to make achievement even better. This should reduce occasions when reaction to negative newspaper reports are necessary. Let the public know how you are doing on the assessment tests and more importantly, what you are doing in your schools to give students a quality education.
  - * Prepare a brief, clear release which can be used by the news media. Photographs of students actively engaged in learning are excellent ways to show the positive aspects of schools.
  - * Initiate an ongoing dialogue with the media to keep them informed of what is going on in the district during the course of the entire year.
  - * Respond to all inquiries in a positive, honest manner. Even if the results are less than "glowing", acknowledge needs openly and indicate the plans for improvement or steps that are already underway to correct deficiencies. Be sure to mention areas which have shown improvement over a period of time.

* Use the MEAP presentation as an opportunity to generate parents' interest in their children's educational progress. Awareness of the larger school environment and the context in which testing is done helps to enlist school support.

What Resources Are Available For The Communication Effort?

- Materials have been developed to help report MEAP test results. They are easy to use and can be adapted for use with different types of audiences.

* Monograph #5 describes a process for reporting results to the local school board. Monograph #6 describes procedures for reporting results to the general public through the news media. The processes and procedures in these monographs are being used successfully by local school districts in Michigan.

THINGS TO KEEP IN MIND WHEN INTERPRETING MEAP TEST RESULTS

1. In the Objectives, the word "will" is either used or implied. This does not mean that the state is mandating that the student will do something or must, by Department edict, learn a particular bit of information. The use of the term "will" simply means that as a demonstration of objective attainment, a student will be able to do what is stated in the objective.

2. The performance objectives assessed by the test items are minimal objectives. Therefore, these objectives do not cover the entire range of skills that educators would consider important for many students to know in mathematics and reading at the beginning of fourth, seventh and tenth grade. In addition, local school districts may have other important objectives which are unique to the local district.

3. Only selected objectives from the total set of minimal performance objectives in mathematics and reading are tested. Therefore, educators should not assume that students have attained all minimal objectives, even if they attained all objectives tested this year.

4. The minimal performance objectives are a guide to expectations for student performance. Some youngsters may not attain some of the objectives until later than may be the usual case. Individual student characteristics should be kept in mind when interpreting test results to parents.

5. The criterion for objective attainment was set by the State Board of Education. Local educators may feel that for some objectives, or some students, the criterion is too high or too low. This should be considered when interpreting results.

6. Low scores on the assessment test should not be regarded as an indication that a school or classroom is inefficient or uninspiring to students. Low scores are an indication that there are educational needs present. However, low scores do not say what caused these needs.

7. Test results and performance objectives should be related to the instructional materials and curriculum being used in the school the student is attending. Parents should be made aware of the context in which the testing has been done. Awareness of the larger school environment should help understanding of student performance by the parent.

8. Explain to parents the role they can play in their child's education. The minimal performance objectives and MEAP test results are being explained to them for the benefit of their child's education.

SCHOOL LEVEL USE

Much is known about the use of test results to improve student achievement. Appendix D, for example, lists several major principles that research has shown are related to improved school achievement. Because achievement occurs at the classroom and school building levels, though, the building principal and all classroom teachers determine the extent to which test results are used to help students. Models for using and reporting MEAP and other test results have been developed. These methods were developed in schools and are based on realistic resource constraints. Schools have used these models in the past and each is described in this section. Attending to specific curriculum and instructional needs is the job of all teachers, not just the fourth, seventh and tenth grade teachers.

Why Use MEAP?

- MEAP test results provide valuable information on the status of basic skills education in schools.
- MEAP is a reliable vehicle for improving the educational quality of each Michigan public school and benefits all students, both individually and collectively.
- MEAP helps detect trends and patterns in the performance of students.
- MEAP helps match skill needs with curriculum and instructional programs.
- MEAP helps teachers focus directly upon the minimum skill needs of students.
- MEAP helps teachers plan group and individual instruction.

Who Should Be Involved?

- The School Principal should provide the leadership and direction in this team effort.
- School personnel should use MEAP test results to help address the following areas of concern:
  - Identify the skill needs of students tested.
  - Review the curriculum and instructional programs.
  - Establish instructional priorities for the school year.
  - Involve parents in the educational process.
- Parents can use the MEAP results to determine the child's progress in acquiring basic math and reading skills.

How Should The Principal Provide Leadership And Direction?

- The principal's major responsibilities are to:
  - Hand out test results to staff promptly.
  - Organize and direct the MEAP School Utilization Team.
  - Show enthusiasm and concern for the improvement of student achievement.
  - Give assistance and support to the staff in their efforts to enhance the school curriculum and instructional programs.
  - Report school test results and a proposed plan of action to parents.

How Should The School Team Use MEAP Results?

- The school team's major responsibilities are to:
  - * Explore staff expectations of the students.
  - * Examine test results to identify problems and needs.
  - * Conduct a curriculum and instructional program review to determine current strategies used to teach the skills that are tested.
  - * Make decisions, set goals and devise a plan of action to address needs (based upon findings).
- The MEAP School Utilization Team should include at least one representative from each grade level and/or curriculum area, as well as each area of support services.
  - * In small schools, full staff participation is feasible.
  - * In large schools, grade-level teams (K-3, 4-6, 7-9) may be a better alternative.
- The emphasis of the team should be on people pulling together in an agreed upon direction to determine needs.
- A positive approach is needed to assure that changes agreed upon are implemented with care and concern for improvement.
- Instructional changes can be made most easily when the school staff is involved in the change.
- Two-way communication is important and everyone should be aware of what everyone else is doing, in terms of what, where and when skills are taught, what needs each perceives, and finally, how each can help the other.

What Resources Are Available For The Staff Effort?

- Materials have been developed to help school staffs use MEAP test results. They are easy to use and can be adapted for use in different types of schools.
  - * Monograph #3 tells how to use MEAP test results for curriculum and program review. Persons who should be involved in the team-oriented review process are identified. Then the major steps in the review process are given. For each step, the resources which are available for use are described and the procedures for implementing the step are explained: (1) determine staff expectations, (2) examine student performance, (3) set criteria at the school level, (4) examine the current delivery system, (5) make decisions and set goals, and (6) develop a plan of action. Examples of many of the resources are included in the appendices of this monograph.
  - * Monograph #4 provides ideas about ways to report MEAP test results to parents. A discussion of why MEAP test results should be shared with parents is provided. Persons who should be involved in the preparation for reporting and in the actual reporting are identified. There are two levels for sharing test results with parents. First, is the personal level, sharing the test's results of individual students with their parent(s). Second, is the school level, sharing the tests' results of the school, as a whole, with all the parents of the school population and the community at large. Four models for parent reporting are described:
    - — **Model A, Individual Parent/Teacher Conferences,** is recommended. It personalizes the results, for two-way communication, and gets parents involved.

— **Model B**, to mail or send the Pamphlet for Parents home with the student is the least desirable method of reporting. However, something is better than nothing when communicating with parents.

— **Model C, Group PTA Meetings**, has the advantage of putting MEAP into the larger context of the total school program.

— **Model D**, to provide school level MEAP test results to the school community at large, is an important component of a total reporting program. One method of gaining community support for schools is to keep the community informed about important things that are happening in the schools. Because of the general interest in test performance, reporting MEAP results within a total school context provides an excellent opportunity to report, not only the test results, but also the activities which will be done based on conclusions drawn from the test results.

STEPS THE SCHOOL TEAM MAY WANT TO CONSIDER WHEN USING MEAP TEST RESULTS

1. **Using the School Summary Report, examine objective attainment levels.**
2. **Using the Feeder School Report, examine the objective attainment levels of students who are no longer in the building.**
3. **Establish an acceptable criterion level of attainment for the school.**
4. **List in priority order all objectives (from both the School Summary Report and the Feeder School Report) falling below the acceptable criterion level set in #3.**
5. **Determine where the MEAP objectives are currently being taught in the instructional sequence in the building and what instructional materials are used.**
6. **Identify the present needs.**
7. **Make decisions, set goals, and outline a plan of action. Share the plan with the full staff.**
8. **Initiate a plan of action.**
9. **Set up an evaluation mechanism.**

INDIVIDUAL STUDENT USE

How can MEAP Test Results Be Used To Help Individual Students Tested?

- The responsibility of using MEAP test results to focus attention on the specific minimal skill needs of individual students falls on different staff members in different school situations (grade level teachers, content area teachers, counselors, etc.):
  - * In **elementary schools** this responsibility is most frequently that of the fourth grade teachers.
  - * In **secondary schools** this responsibility is often not assumed by, nor assigned to, anyone. If, however, individual students are to receive needed help, the responsibility must be assigned and carried out.
- Before using MEAP test results to help an individual student, the following questions should be answered:
  - * What are the MEAP objectives? (reading and mathematics, grades four, seven, and ten.)
  - * Are the objectives tested part of the curriculum in earlier or later grades?
  - * Where are the objectives introduced, taught, reviewed?
  - * Which objectives are most important, at this point in time, for this student?
  - * What is the best approach to instruction?
- When using the individual and classroom data, the results must be examined and needs identified (using the **Classroom Listing Report** and the **Individual Student Report**), criterion levels determined, curriculum reviewed, and goals set, etc.

What Resources Are Available For Helping Individual Students Tested?

- Monograph #2 tells how MEAP test results can be used to identify and address individual student weaknesses on the skills tested. The major steps in the process are provided, along with identification of resources to assist in implementing each step. Six steps are identified: (1) become familiar with the MEAP tests, (2) review a student's performance and identify needs, (3) set goals and prepare draft plans for remedying student weaknesses, (4) share the results and the draft plan with the students, (5) implement the plans, and (6) evaluate the effectiveness of the plans.
- The flyer entitled "Understanding and Using the Individual Student Report" explains why the test was given, what the report means, and how the results can be used to identify skill weaknesses. It can be used by teachers in conferences with students and parents. It can also be used by students examining their Individual Student Report independently. The flyer can be removed from the handbook and duplicated (see Appendix E).
- The instructional support materials can be used as a tool to inservice local personnel or as a resource by individual teachers.
  - * MATHEMATICS: Five areas of instruction (Fractions, Decimals, Ratio and Proportions, Percent and Whole Number Computation) have been addressed in two sets of mathematics materials. These materials were prepared to assist teachers whose students are having difficulties in one or more of these areas.

* READING: For grades 4 and 7 the support materials contain information about areas of reading which caused problems for students on the MEAP tests. A supplement to these materials provides instructional ideas for the current reading objectives.

  The secondary level support materials identify a process for disseminating MEAP reading results to various departments in a high school. These materials include examples of reading objectives and instructional procedures and strategies within content areas.

* **Other:** Materials have also been developed in other subject areas and specifically for secondary schools (see Appendix G).

THINGS TO KEEP IN MIND WHEN HELPING INDIVIDUAL STUDENTS

1. Students want to know their test results as soon as possible.
2. Students appreciate explanations and interpretations of their results and usually respond positively to concern and encouragement.
3. Individual student characteristics should be kept in mind when interpreting test results.
4. Individual student needs may vary from school priorities.
5. The amount of instruction time is limited (remediation versus teaching new skills).
6. Individual students with the same needs can be grouped for instruction.
7. Some types of remediation can be integrated into on-going activities.
8. A plan of action to address needs must be developed and communicated to students and parents.
9. Test results and performance objectives should be related to the instructional materials and curriculum being used in the school.

SECTION III

DO YOU USE MEAP TEST RESULTS APPROPRIATELY?

(THE FOLLOWING SECTION IS THE OFFICIAL POSITION STATEMENT ADOPTED BY THE STATE BOARD OF EDUCATION IN APRIL, 1977)

The PURPOSE OF THE MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM (MEAP): **is to provide information on the status and progress of Michigan basic skills education to the State Board of Education, the Executive Office, the Legislature, local educators, teachers, students, and parents.**

Introduction

Tests have been a major instructional tool of teachers for years. Educators use norm-referenced tests, objective-referenced tests, teacher observations and assignments as ways of gathering information about student performance. All of this information can be used to help make educational decisions in a more systematic way. Tests provide for standard measurement of all pupils and help control personal bias and arbitrary judgments by educational decisionmakers. Though judgment still must be used, the more objective information educators have on which to base their judgments, the better their decisions are likely to be.

The state, through the MEAP, supplies educators with additional information which can be used at all levels in the decision-making process. MEAP test results as well as results from any test may be misused. This booklet is intended to provide information which will help people use test results appropriately. While it is specifically focused on MEAP, most points are true of any test.

• Are the objectives tested by MEAP supposed to be used to determine curricula and instructional materials?

The MEAP objectives are not to be used as the sole determiners of curricula and instructional materials. MEAP assesses an important, but limited, number of minimal skill objectives in reading and mathematics. Educators can use MEAP test results to help them decide what to include in their curricula and what instructional materials might be useful to meet student needs. Teachers and administrators determine curricula and instructional materials; MEAP objectives do not!

• Can the state use MEAP test results to examine curricula developments?

Yes. The Michigan Department of Education uses the MEAP test results when meeting with statewide curriculum groups to discuss Michigan education. The MEAP test results are part of the information considered when curricula decisions are being made by curriculum specialists, both at the state and local levels.

• Do the objectives indicate all the skills and knowledge that are important for students to acquire?

No. The objectives on which MEAP is based are minimal performance objectives in reading and math. Students should acquire skills and knowledge in many other areas during the course of their education.

• Can MEAP test results be used to determine high needs in reading and/or mathematics?

Yes. Using MEAP test results to identify high needs schools in reading and/or mathematics is one of the major uses the state makes of MEAP test results. The determination of inequities in school basic skills attainment levels enables the state to initiate contacts with local school districts and offer to help them in addressing the achievement problems there. In this way the State Board of Education carries out its constitutional responsibilities for general

supervision of education, and local districts continue to operate instructional programs.

• Should the MEAP test results be used to evaluate teachers?

No. The skills and knowledge tested by MEAP are acquired by students over time. Student performance on MEAP tests is not the responsibility of only one teacher at one point in time. For example, the assessment tests administered in September to fourth graders assess what they have acquired in grades kindergarten through three from many teachers. MEAP tests were not designed to be used as a tool for individual teacher evaluation! It was resolved by the State Board of Education on March 1, 1977, that "the (MEAP) data are not to be used for the formal evaluation of individual school district personnel."

• Should the MEAP test results be used to evaluate educational programs?

Using MEAP test results to evaluate programs is appropriate if the objectives tested (i.e., reading and mathematics) are relevant to the program. MEAP test results reflect student needs in the areas of reading and mathematics and can be used to spot weaknesses in reading and mathematics programs, or in other areas where students are tested.

• Are the MEAP test results adequate to use as a sole indicator of what students know?

No. MEAP tests only indicate what students know about the selected objectives tested in reading and mathematics. To determine the status of student knowledge in other areas, other assessments must be made. Educators should use MEAP test results in conjunction with other information about students (i.e., teacher observations, etc.) before decisions are made.

• Should educators use MEAP test results to analyze student progress in the basic skills tested in reading and mathematics?

Yes. Educators can use the MEAP test results to help identify student strengths and weaknesses in the basic skills areas tested. Identification of general student basic skills needs will enable the teacher to devise instructional programs best suited to meet individual students' needs.

• Should students be grouped on the basis of MEAP tests alone?

In general, no. When making the decision on how to group students, educators should use a variety of information to plan instruction. MEAP test results might be part, but not all of the information a teacher needs to plan group or individual instruction. MEAP results should not be used to track or otherwise segregate students!

• Should MEAP test results be used to compare or rank schools or districts?

MEAP tests results can be used to identify schools and districts with needs in reading and mathematics. When making comparisons of schools within a district or districts within the state for the purpose of identifying needs, judgments should not be made regarding the overall quality of education students receive. To evaluate educational programs in a total sense, there are numerous other factors which must also be considered.

Schools or districts in general should not be ranked on the basis of MEAP test results. Such ranking may result in persons drawing conclusions that are inappropriate to the data on which the rankings are based. School districts and the people they serve are quite diverse, so if MEAP results are not carefully interpreted,

uninformed persons may draw erroneous conclusions from rankings based on MEAP results alone.

• Should MEAP scores from the different subject areas be compared?

The temptation exists to compare the performance of students on the reading and mathematics portions of the assessment tests. However, for several reasons the reading and mathematics results are not directly comparable. Consideration must be given to the difficulty level of the two tests, the nature of the objectives on which the tests are based, and the nature of the two subject areas themselves. The purpose of the assessment tests is to determine student needs in reading or mathematics. The tests were not designed to evaluate reading attainment levels relative to mathematics attainment levels or vice versa.

• Do MEAP tests provide the same kinds of information as norm-referenced tests?

MEAP tests do not provide the same kinds of information as norm-referenced tests. Norm-referenced test information is usually used to determine how a student is doing relative to the performance of other students on the same test. MEAP tests provide information on whether or not a student has attained a specific skill or performance objective.

MEAP tests are not a replacement for norm-referenced tests; both kinds of information are useful to educational decisionmakers. Because MEAP tests are referenced to a selected number of minimal performance objectives in reading and math, educators also need information on other areas of student performance to make good decisions.

• Should MEAP test results be used by the state to help in the allocation of state funds?

Yes, it is considered appropriate for the state to use MEAP test results as part of the process for allocating state funds. The MEAP tests yield the only uniform achievement data available for the state as a whole. This data can be used as an indicator of need to determine eligibility and priority for state compensatory education funds. The state uses the MEAP test results to help determine the highest incidences of pupils with reading and mathematics skills deficiencies and the eligibility of schools for funds to provide assistance in these two curricular areas.

• Can any one individual, i.e., teacher, principal, superintendent, or school board member, assume sole credit for student performance on MEAP tests?

No. Just as no one individual should be held solely responsible for student performance on MEAP tests, so should no one individual try to assume sole credit for student performance. Student performance is the result of years in the educational system. Parents and educators all contribute to the educational process which is assessed by the MEAP tests.

• Can educators use MEAP test results in curriculum planning?

Yes. MEAP test results provide teachers and/or principals with additional information to be used in curriculum planning. School and classroom objectives can be related to the MEAP objectives tested. Once an objective "match" is made the MEAP test results can be used as one indicator of how well the present curriculum is doing in helping students to attain these objectives. Student weakness in particular areas might necessitate some curriculum revision.

• Can MEAP or any testing program benefit students if the results are not used for instructional and program planning?

No. If educators do not use test results, then a testing program will be of benefit to no one. Care must be taken to use test results in appropriate ways, but non-use of test results is not appropriate. Because the test results can be used in ways beneficial to individual students, efforts must be made to make appropriate uses of test results.

• Can newspaper reporters or real estate agents, for example, use MEAP test results alone to provide a complete and accurate picture of a school or district?

No. Because both of these groups of people have influence on the decisions citizens make, they must be particularly careful to accurately interpret the information given them. One set of scores cannot adequately describe a school or school system, especially when the test scores only reflect student performance on a test of basic skills. Test data must not be presented in an overly simplistic way.

Reporters and realtors should make sure that they present a balanced account of the many factors which contribute to a successful school. Rather than depict a building or district just through test scores, both newspaper reporters and realtors should seek to help their audiences understand the complexity of the local school systems. Since citizens feel different aspects of local schools are important, one set of data cannot possibly answer all of their concerns. Citizens need to consider such things as the commitment of the school staff, the breadth of the course offerings, the attitudes of the students to school and learning, and the commitment of other parents and taxpayers to education, and so forth. Realtors and reporters need to present these types of information also in order to help citizens reach a more complete understanding of their schools.

• Should MEAP test results be shared with students, parents and citizens?

Yes. MEAP test results form a partial base for reporting to students, parents and citizens on the "health" of minimal basic skills education in the schools. However, in making such reports care must be taken to present the information clearly and accurately in a way that is easily understood by the audience being addressed. The test data should not be used to make over-simplified statements or sweeping generalizations about education on a school, district or state level!

• What should be done when MEAP data is misused?

The staff of MEAP is most anxious to correct misuses of MEAP data. In order to assist staff in their efforts, please notify the Supervisor of MEAP regarding any such problems of which you are aware. Staff will investigate, make recommendations to appropriate district staff, and inform the person who raised the complaint as to what action was taken.

MEAP staff is also interested in hearing about positive and innovative uses of MEAP data. Such uses can then be shared with other local district personnel.

Call (517) 373-8393 or write MEAP, P. O. Box 30008, Lansing, Michigan 48909.

APPENDIX A

THE EDUCATIONAL ASSESSMENT REPORT FORMS

Local educators will receive various reports from the Michigan Educational Assessment Program. These reports are returned to superintendents, to principals in School folders, and to teachers in Classroom folders. The following reports (exceptions noted) are provided for grades four, seven, and ten:

Individual Student Report
Classroom Listing Report
School Summary Report (includes Proportions data)
District Summary Report (includes Proportions data)
Test Item Analysis — Classroom, School, District
Parent Pamphlet
Feeder School Report (optional) — grade seven and grade ten
Research Code Report (optional)

Reading the Reports

The following illustrations of the report forms are designed to help individuals interpret the assessment data. The major sections of the illustrated forms are coded with capital letters which match specific explanations in the narrative. However, reading the report forms is only the first step in using the assessment data. A detailed discussion of how to use the assessment results can be found in the body of this **Handbook.**

• **Individual Student Report.** The Individual Student Report presents a student's performance on each test item for all the mathematics and reading objectives tested and indicates attainment or non-attainment of each objective. A student must correctly answer at least 2 of 3 test questions to attain an objective. Two copies of this report are provided for each student who participated in the assessment. These reports are available from the building principal. Figure 1 illustrates a Grade 4 Individual Student Report form.

Section **A**, at the top of the report, contains identification information — name of report, grade, student name and number (optional), teacher name and class section number, district name, school name, student age, school year, and research and feeder school codes (if used).

Section **B** gives the objective code which matches the objectives to the Michigan Department of Education set of Minimal Performance Objectives for Mathematics.

Section **C** gives the brief description of the mathematics objectives grouped by the mathematics skill area to which they belong.

Section **D** indicates the test item numbers that measure each mathematics objective and whether the student's response was correct or incorrect for each item. A correct response is indicated by a plus (+) sign. An incorrect response is shown by a letter (A-D) which indicates the student's incorrect answer choice. The letter "M" means that the student has marked more than one answer choice. An asterisk (*) is used to indicate that the student did not respond to an item, and a blank space indicates the student did not reach that item in the test.

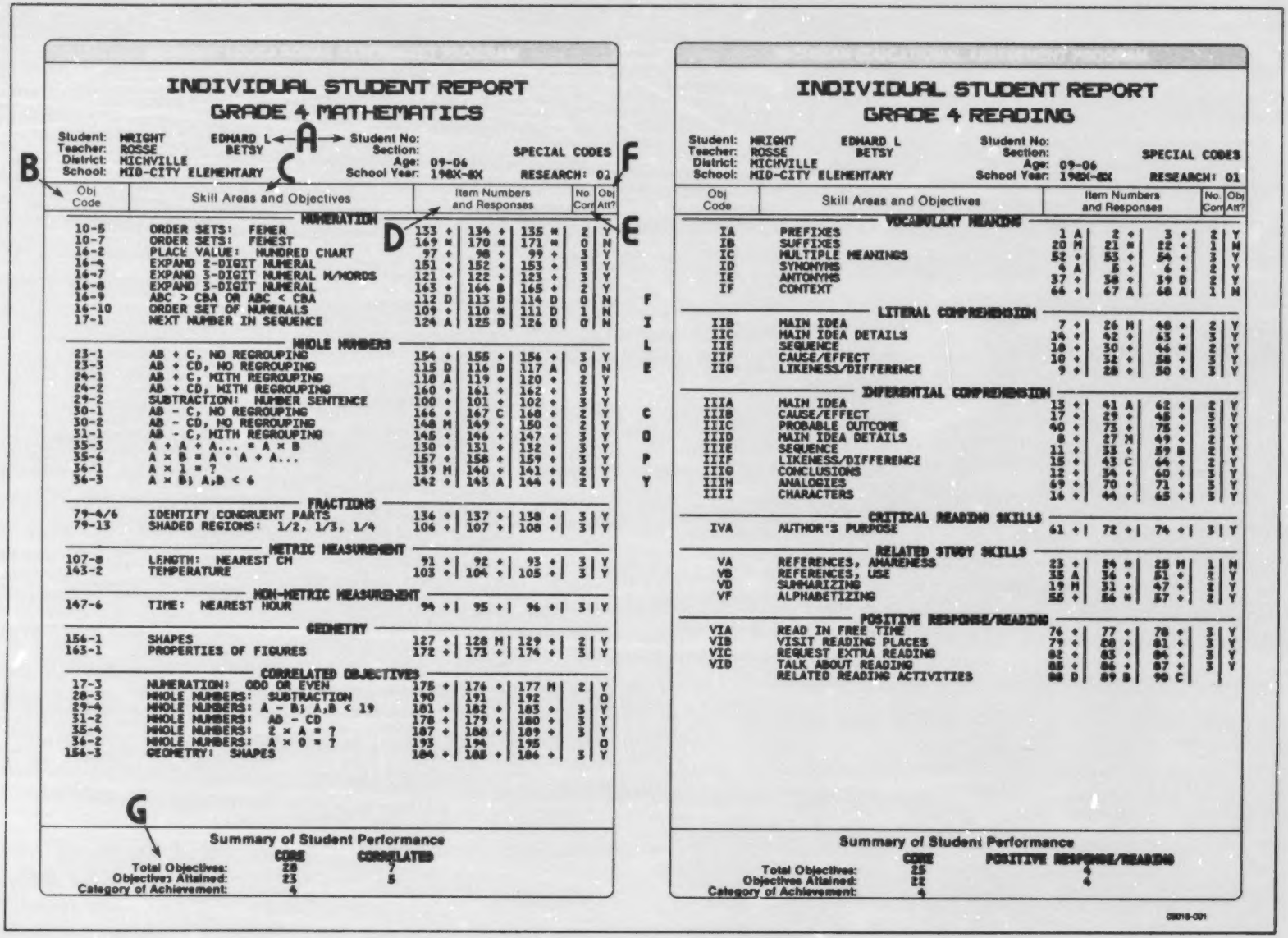
Section **E** shows the number of items answered correctly for each mathematics objective.

Section **F** gives objective attainment. "Y" indicates attainment, "N" indicates non-attainment, and "O" indicates that the student did not progress far enough through the mathematics test for objective attainment to be reported. Students have to answer at least two of three items correctly to attain an objective.

Section **G** shows the total number of objectives tested and the total number of objectives attained, along with the student's Category of Achievement (1, 2, 3, or 4). This is based on the number of objectives attained and is further explained in the discussion of the Proportions Report.

The information described in Sections **A-G** is then repeated for the reading objectives tested. The Related Activities/Reading items do not measure specific objectives. Although the student's response to each of these items is given, the "No. Corr." and "Obj. Att." columns will be blank.

FIGURE 1



INDIVIDUAL STUDENT REPORT
GRADE 4 MATHEMATICS

Student: WRIGHT EDWARD L (A) Student No:
Teacher: ROSSE BETSY Section:
District: MICHVILLE Age: 09-06 SPECIAL CODES
School: MID-CITY ELEMENTARY School Year: 198X-8X RESEARCH: 01

(B) (C) (D) (E) (F)

Obj Code	Skill Areas and Objectives	Item Numbers and Responses			No. Corr	Obj Att?
	NUMERATION					
10-5	ORDER SETS: FEWER	133 +	134 +	135 M	2	Y
10-7	ORDER SETS: FEWEST	169 M	170 M	171 M	0	N
16-2	PLACE VALUE: HUNDRED CHART	97 +	98 +	99 +	3	Y
16-4	EXPAND 2-DIGIT NUMERAL	151 +	152 +	153 +	3	Y
16-7	EXPAND 3-DIGIT NUMERAL W/WORDS	121 +	122 +	123 +	3	Y
16-8	EXPAND 3-DIGIT NUMERAL	163 +	164 B	165 +	2	Y
16-9	ABC > CBA OR ABC < CBA	112 D	113 D	114 D	0	N
16-10	ORDER SET OF NUMERALS	109 +	110 M	111 D	1	N
17-1	NEXT NUMBER IN SEQUENCE	124 A	125 D	126 D	0	N
	WHOLE NUMBERS					
23-1	AB + C, NO REGROUPING	154 +	155 +	156 +	3	Y
23-3	AB + CD, NO REGROUPING	115 D	116 D	117 A	0	N
24-1	AB + C, WITH REGROUPING	118 A	119 +	120 +	2	Y
24-2	AB + CD, WITH REGROUPING	160 +	161 +	162 +	3	Y
29-2	SUBTRACTION: NUMBER SENTENCE	100 +	101 +	102 +	3	Y
30-1	AB - C, NO REGROUPING	166 +	167 C	168 +	2	Y
30-2	AB - CD, NO REGROUPING	148 M	149 +	150 +	2	Y
31-1	AB - C, WITH REGROUPING	145 +	146 +	147 +	3	Y
35-3	A + A + A... = A × B	130 +	131 +	132 +	3	Y
35-6	A × B = A + A + A...	157 +	158 +	159 +	3	Y
36-1	A × 1 = ?	139 M	140 +	141 +	2	Y
36-3	A × B; A,B < 6	142 +	143 A	144 +	2	Y
	FRACTIONS					
79-4/6	IDENTIFY CONGRUENT PARTS	136 +	137 +	138 +	3	Y
79-13	SHADED REGIONS: 1/2, 1/3, 1/4	106 +	107 +	108 +	3	Y
	METRIC MEASUREMENT					
107-8	LENGTH: NEAREST CM	91 +	92 +	93 +	3	Y
143-2	TEMPERATURE	103 +	104 +	105 +	3	Y
	NON-METRIC MEASUREMENT					
147-6	TIME: NEAREST HOUR	94 +	95 +	96 +	3	Y
	GEOMETRY					
156-1	SHAPES	127 +	128 M	129 +	2	Y
163-1	PROPERTIES OF FIGURES	172 +	173 +	174 +	3	Y
	CORRELATED OBJECTIVES					
17-3	NUMERATION: ODD OR EVEN	175 +	176 +	177 M	2	Y
28-3	WHOLE NUMBERS: SUBTRACTION	190	191	192		O
29-4	WHOLE NUMBERS: A - B; A,B < 19	181 +	182 +	183 +	3	Y
31-2	WHOLE NUMBERS: AB - CD	178 +	179 +	180 +	3	Y
35-4	WHOLE NUMBERS: 2 × A = ?	187 +	188 +	189 +	3	Y
36-2	WHOLE NUMBERS: A × 0 = ?	193	194	195		O
156-3	GEOMETRY: SHAPES	184 +	185 +	186 +	3	Y

(G)

Summary of Student Performance

	CORE	CORRELATED
Total Objectives:	28	7
Objectives Attained:	23	5
Category of Achievement:	4	

FILE COPY

INDIVIDUAL STUDENT REPORT
GRADE 4 READING

Student: WRIGHT EDWARD L Student No:
Teacher: ROSSE BETSY Section:
District: MICHVILLE Age: 09-06 SPECIAL CODES
School: MID-CITY ELEMENTARY School Year: 198X-8X RESEARCH: 01

Obj Code	Skill Areas and Objectives	Item Numbers and Responses			No. Corr	Obj Att?
	VOCABULARY MEANING					
IA	PREFIXES	1 A	2 +	3 +	2	Y
IB	SUFFIXES	20 M	21 M	22 +	1	N
IC	MULTIPLE MEANINGS	52 +	53 +	54 +	3	Y
ID	SYNONYMS	4 A	5 +	6 +	2	Y
IE	ANTONYMS	37 +	38 +	39 D	2	Y
IF	CONTEXT	66 +	67 A	68 A	1	N
	LITERAL COMPREHENSION					
IIB	MAIN IDEA	7 +	26 M	48 +	2	Y
IIC	MAIN IDEA DETAILS	14 +	42 +	63 +	3	Y
IIE	SEQUENCE	10 +	30 +	44 M	2	Y
IIF	CAUSE/EFFECT	10 +	32 +	58 +	3	Y
IIG	LIKENESS/DIFFERENCE	9 +	28 +	50 +	3	Y
	INFERENTIAL COMPREHENSION					
IIIA	MAIN IDEA	13 +	41 A	62 +	2	Y
IIIB	CAUSE/EFFECT	17 +	29 +	46 +	3	Y
IIIC	PROBABLE OUTCOME	40 +	73 +	78 +	3	Y
IIID	MAIN IDEA DETAILS	8 +	27 M	49 +	2	Y
IIIE	SEQUENCE	11 +	35 +	59 B	2	Y
IIIF	LIKENESS/DIFFERENCE	15 +	43 C	64 +	2	Y
IIIG	CONCLUSIONS	12 +	34 +	60 +	3	Y
IIIH	ANALOGIES	69 +	70 +	71 +	3	Y
IIII	CHARACTERS	16 +	44 +	65 +	3	Y
	CRITICAL READING SKILLS					
IVA	AUTHOR'S PURPOSE	61 +	72 +	74 +	3	Y
	RELATED STUDY SKILLS					
VA	REFERENCES, AWARENESS	23 +	24 M	25 M	1	N
VB	REFERENCES, USE	35 A	36 +	51 +	2	Y
VD	SUMMARIZING	19 M	31 +	47 +	2	Y
VF	ALPHABETIZING	55 +	56 M	57 +	2	Y
	POSITIVE RESPONSE/READING					
VIA	READ IN FREE TIME	76 +	77 +	78 +	3	Y
VIB	VISIT READING PLACES	79 +	80 +	81 +	3	Y
VIC	REQUEST EXTRA READING	82 +	83 +	84 +	3	Y
VID	TALK ABOUT READING	85 +	86 +	87 +	3	Y
	RELATED READING ACTIVITIES	88 D	89 B	90 C		

Summary of Student Performance

	CORE	POSITIVE RESPONSE/READING
Total Objectives:	25	4
Objectives Attained:	22	4
Category of Achievement:	4	

03018-001

Recognizing the typical organizational differences between elementary and secondary schools, two different formats of the Individual Student Report are provided. Both copies of the 4th grade report and one copy of the 7th and 10th grade reports for each student use the exact format of Figure 1. On this format, both the reading and mathematics results are given for a particular single student. Reports in this format can be placed in the students' permanent record file. The reports for all students are provided, in alphabetical order, for each school separately.

The second copy of the 7th and 10th grade reports for each student uses a different format. In this format the test results for two students are given on a single form for a single subject, mathematics or reading (student A on the left and student B on the right). The reports are grouped by teacher and class section for each subject. Within each class section, the student results are presented alphabetically, two per report. This separation of student results by subject into alphabetically ordered class section groups for each teacher should make the test results easier to use with individual students and their parents.

• **Classroom Listing Report.** The Classroom Listing Report summarizes, for an entire classroom, the information contained on the Individual Student Reports. One report is prepared for each classroom grouping of students. A copy of this report is returned in both the Classroom folder and the School folder.

The Classroom Listing Report can be used to spot areas of apparent weakness that are present in individuals or groups of students. Objectives which have not been attained can be included as part of the instructional program. Use of these reports will also help determine if one or more of the teachers in the building need special resources to help their students attain objectives.

An example of the Classroom Listing Report for grade 4 mathematics is shown in Figure 2. A similar report is provided for reading.

Section **A** of the report provides necessary identification information — name of report, subject, grade, district, school, teacher and class section.

Section **B** gives the objective codes. Short descriptions of the objectives and skill areas appear on the back of the report.

Section **C** is an alphabetical listing of each student in the group.

Section **D** shows, for each student, whether or not an objective was attained. An "N" means the student did not attain the objective. A blank space indicates attainment. An "O" for "Omit" indicates that a student did not progress far enough through the test for objective attainment to be determined.

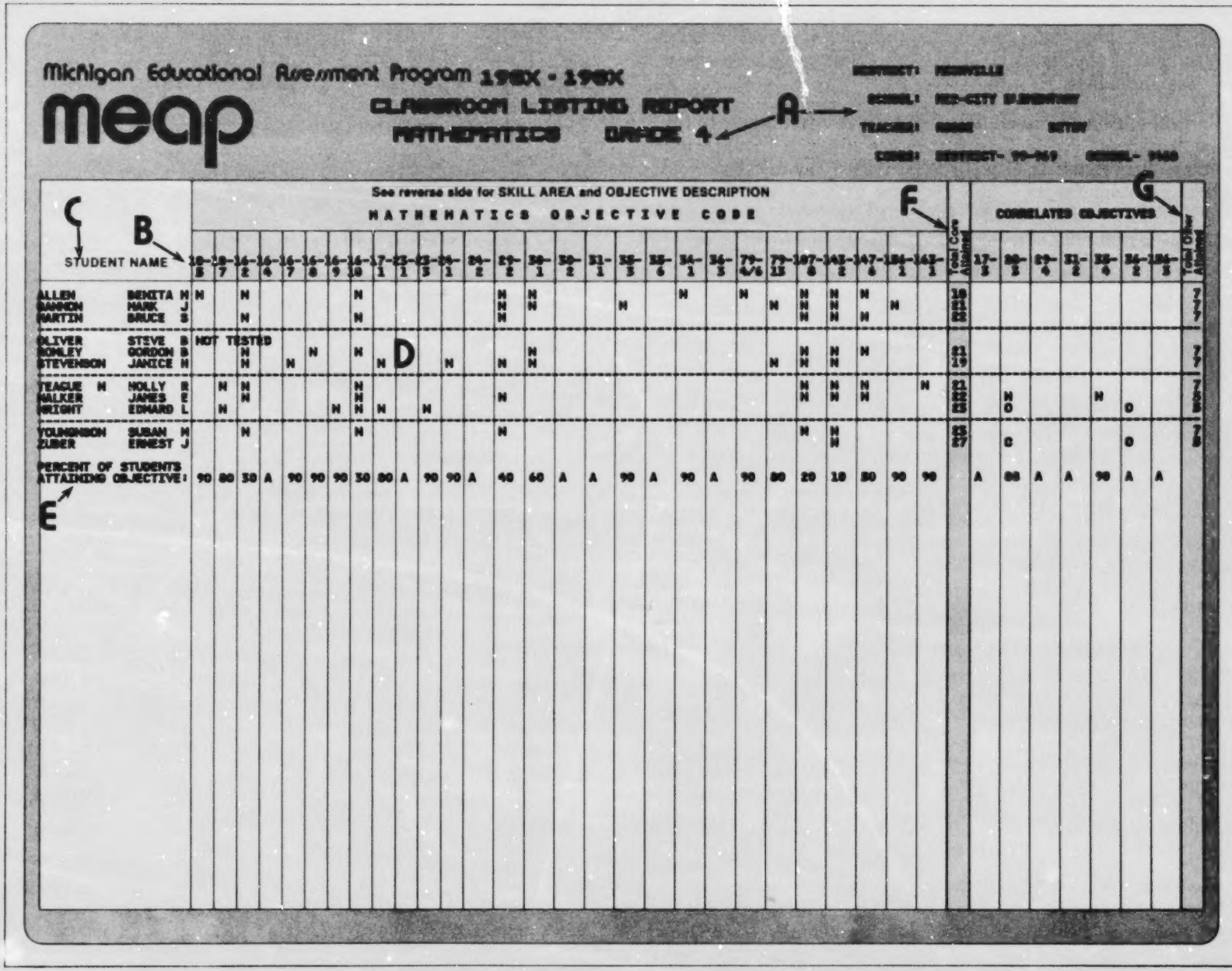
Section **E** gives the percentage of pupils attaining each objective. If all students attained an objective, "A" will appear.

Section **F** shows the number of objectives attained by each student. The number given here includes only those objectives involved in the calculation of the proportions data.

Section **G** shows the total number of positive response to reading objectives attained by each student. On the mathematics classroom listing report, the number of correlated objectives, attained by each student is shown in this section.

• **School and District Summaries.** The School Summary and the District Summary are used to report the assessment data for each school and district. The School Summary gives an overall picture of how students in each school performed on the assessment tests. A copy of the School Summary is returned to each principal and a copy is included in the Classroom folder. The superintendent receives a copy of each School Summary for all the schools in the district.

FIGURE 2



Michigan Educational Assessment Program 198X - 198X

meap

CLASSROOM LISTING REPORT

MATHEMATICS GRADE 4

A

DISTRICT: PERRYVILLE

SCHOOL: RED-CITY ELEMENTARY

TEACHER: SMITH BETSY

CODES: DISTRICT- 99-969 SCHOOL- 9460

See reverse side for SKILL AREA and OBJECTIVE DESCRIPTION

MATHEMATICS OBJECTIVE CODE

C

STUDENT NAME

B

STUDENT NAME	10-5	10-7	14-2	16-4	16-7	16-8	16-9	16-10	17-1	23-1	23-3	24-1	24-2	29-2	30-1	30-2	31-1	33-3	33-6	34-1	34-3	79-4/6	79-13	107-6	143-2	147-6	184-1	143-1	Total Core Attained
ALLEN BENITA M	N		N					N						N	N							N		N	N	N			10
BANNON MARK J														N	N			N		N			N	N	N		N		11
MARTIN BRUCE S			N					N						N										N	N	N			7
OLIVER STEVE B	NOT TESTED																												
ROWLEY GORDON B			N			N				D					N									N	N	N			11
STEVENSON JANICE M			N		N			N	N			N		N	N								N	N	N	N			10
TEAGUE M NOLLY R		N	N					N																N	N	N		N	8
WALKER JAMES E			N					N						N										N	N	N			7
WRIGHT EDWARD L		N					N	N	N		N													N	N	N			8
YOUNGSON SUSAN M			N					N						N										N	N				7
ZUBER ERNEST J																								N	N				5
PERCENT OF STUDENTS ATTAINING OBJECTIVE:	90	80	30	A	90	90	90	30	80	A	90	90	A	40	60	A	A	90	A	90	A	90	80	20	10	80	90	90	

E

F

G

CORRELATED OBJECTIVES

STUDENT NAME	17-5	30-5	23-4	31-2	33-4	34-2	184-5	Total Other Attained
ALLEN BENITA M								7
BANNON MARK J								7
MARTIN BRUCE S								7
OLIVER STEVE B								
ROWLEY GORDON B								7
STEVENSON JANICE M								7
TEAGUE M NOLLY R		N			N	O		8
WALKER JAMES E								8
WRIGHT EDWARD L		O				O		8
YOUNGSON SUSAN M		C				O		7
ZUBER ERNEST J								5
PERCENT OF STUDENTS ATTAINING OBJECTIVE:	A	88	A	A	90	A	A	

The District Summary report is a summary of the test results for all students in the district. The District Summary is returned to the superintendent.

With these reports, objectives not attained by students in the school(s) or district can be identified. It can also be noted what percentage of students are close to or far from reaching the school or district criterion levels. Objectives are grouped according to common headings called Skill Areas, such as "Literal Comprehension" or "Fractions". The skill area attainment is the average of the attainment of all the objectives included in the area.

The School Summary and the District Summary look the same and are read the same. An illustration of the District Summary does not appear here. Figure 3 shows an example of the School Summary report. As with the previous illustrations, Figure 3 is marked with various letters for purposes of explanation.

Section **A**, at the top of the form gives the school identification information. (District identification is given on a District Summary.)

Section **B**, the objective code, matches the objectives to the Michigan Department of Education's set of Minimal Performance Objectives for Mathematics.

Section **C** gives the short objective descriptions grouped by the skill area to which each mathematics objective belongs.

Section **D** indicates the percentage of students attaining each mathematics objective and the average percentage of objective attainment for each skill area.

Section **E** gives the number of students scored on each mathematics objective.

The information described in Sections **B-E** is then repeated for the reading objectives tested.

Section **F**, the Proportions Report, presents the percentage of pupils in each of four categories of achievement for the school or district. Category 4 (highest) contains the percentage of students who attained approximately 3/4 or more of the objectives; Category 3 contains the percentage of students who attained roughly 1/2 to 3/4 of the objectives; Category 2 contains the percentage of students who attained about 1/4 to 1/2 of the objectives; while Category 1 (lowest) contains the percentage of students who attained approximately 1/4 or less of the objectives. Figure 4 shows the range of objectives in each category of achievement. The Proportions Report is described in greater detail (following Section G) below.

Section **G** shows the status and change categories for school summaries. This section will be blank for district summaries, since the definitions of status and change apply only to individual school building results.

Section **H** shows the total number of students included in the school or district summary. This number includes students with results on only one test as well as those with results for both tests.

RANGE OF OBJECTIVE ATTAINMENT IN EACH CATEGORY OF ACHIEVEMENT

	Number of Objectives			
	Reading			Math
Category of Achievement	Grade 4	Grade 7	Grade 10	Grades 4, 7, & 10
4	19 - 25	17 - 23	18 - 24	22 - 28
3	13 - 18	12 - 16	12 - 17	15 - 21
2	7 - 12	6 - 11	6 - 11	8 - 14
1	0 - 6	0 - 5	0 - 5	0 - 7

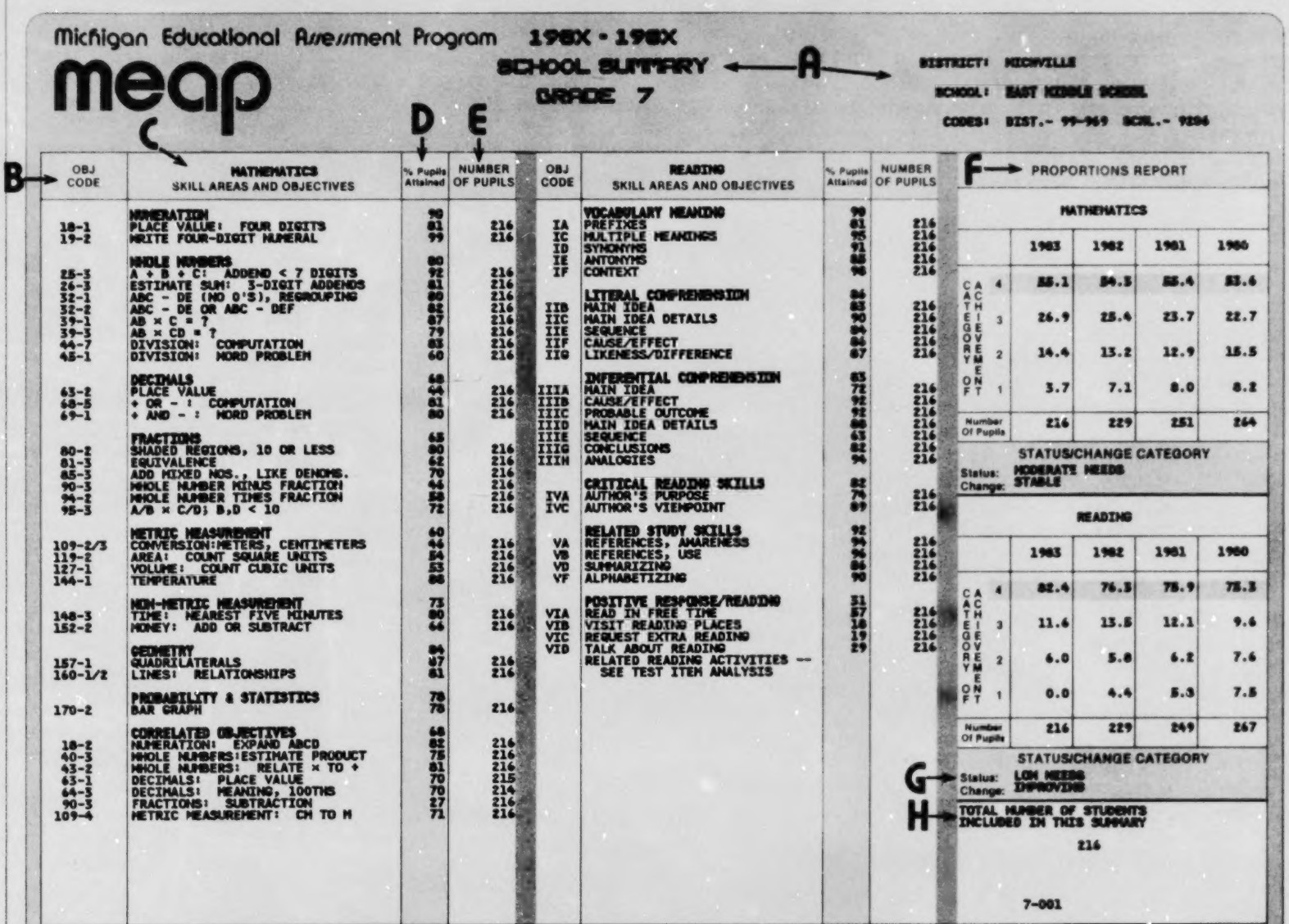
FIGURE 4

Proportions Report

The categories of achievement are reported for reading and mathematics in grades four, seven, and ten. This information (if available) is given for the three most recent years and for 1980-81 as the baseline year.

This year, pupils are included in the proportions report according to the following criterion. A pupil must answer at least

FIGURE 3



Michigan Educational Assessment Program 198X - 198X

meap

SCHOOL SUMMARY — A

GRADE 7

DISTRICT: MICHVILLE
SCHOOL: EAST MIDDLE SCHOOL
CODES: DIST.- 99-969 SCHL.- 9296

B → | OBJ CODE | MATHEMATICS SKILL AREAS AND OBJECTIVES | % Pupils Attained (D) | NUMBER OF PUPILS (E) |
C →

	NUMERATION	90	
18-1	PLACE VALUE: FOUR DIGITS	81	216
19-2	WRITE FOUR-DIGIT NUMERAL	99	216
	WHOLE NUMBERS	80	
25-3	A + B + C: ADDEND < 7 DIGITS	92	216
26-3	ESTIMATE SUM: 3-DIGIT ADDENDS	81	216
32-1	ABC - DE (NO 0'S), REGROUPING	80	216
32-2	ABC - DE OR ABC - DEF	82	216
39-1	AB × C = ?	87	216
39-3	AB × CD = ?	79	216
44-7	DIVISION: COMPUTATION	83	216
45-1	DIVISION: WORD PROBLEM	60	216
	DECIMALS	68	
63-2	PLACE VALUE	44	216
68-5	+ OR - : COMPUTATION	81	216
69-1	+ AND - : WORD PROBLEM	80	216
	FRACTIONS	65	
80-2	SHADED REGIONS, 10 OR LESS	80	216
81-3	EQUIVALENCE	62	216
85-3	ADD MIXED NOS., LIKE DENOMS.	70	216
90-3	WHOLE NUMBER MINUS FRACTION	44	216
94-2	WHOLE NUMBER TIMES FRACTION	58	216
95-3	A/B × C/D; B,D < 10	72	216
	METRIC MEASUREMENT	60	
109-2/3	CONVERSION:METERS, CENTIMETERS	46	216
119-2	AREA: COUNT SQUARE UNITS	54	216
127-1	VOLUME: COUNT CUBIC UNITS	53	216
144-1	TEMPERATURE	88	216
	NON-METRIC MEASUREMENT	73	
148-3	TIME: NEAREST FIVE MINUTES	80	216
152-2	MONEY: ADD OR SUBTRACT	66	216
	GEOMETRY	84	
157-1	QUADRILATERALS	87	216
160-1/2	LINES: RELATIONSHIPS	81	216
	PROBABILITY & STATISTICS	78	
170-2	BAR GRAPH	78	216
	CORRELATED OBJECTIVES	68	
18-2	NUMERATION: EXPAND ABCD	82	216
40-3	WHOLE NUMBERS:ESTIMATE PRODUCT	75	216
43-2	WHOLE NUMBERS: RELATE × TO +	81	216
63-1	DECIMALS: PLACE VALUE	70	215
64-3	DECIMALS: MEANING, 100THS	70	214
90-3	FRACTIONS: SUBTRACTION	27	216
109-4	METRIC MEASUREMENT: CM TO M	71	216

OBJ CODE	READING SKILL AREAS AND OBJECTIVES	% Pupils Attained	NUMBER OF PUPILS
	VOCABULARY MEANING	90	
IA	PREFIXES	81	216
IC	MULTIPLE MEANINGS	95	216
ID	SYNONYMS	91	216
IE	ANTONYMS	88	216
IF	CONTEXT	98	216
	LITERAL COMPREHENSION	86	
IIB	MAIN IDEA	83	216
IIC	MAIN IDEA DETAILS	90	216
IIE	SEQUENCE	84	216
IIF	CAUSE/EFFECT	86	216
IIG	LIKENESS/DIFFERENCE	87	216
	INFERENTIAL COMPREHENSION	85	
IIIA	MAIN IDEA	72	216
IIIB	CAUSE/EFFECT	92	216
IIIC	PROBABLE OUTCOME	92	216
IIID	MAIN IDEA DETAILS	88	216
IIIE	SEQUENCE	63	216
IIIG	CONCLUSIONS	82	216
IIIH	ANALOGIES	94	216
	CRITICAL READING SKILLS	82	
IVA	AUTHOR'S PURPOSE	76	216
IVC	AUTHOR'S VIEWPOINT	89	216
	RELATED STUDY SKILLS	92	
VA	REFERENCES, AWARENESS	94	216
VB	REFERENCES, USE	96	216
VD	SUMMARIZING	86	216
VF	ALPHABETIZING	90	216
	POSITIVE RESPONSE/READING	31	
VIA	READ IN FREE TIME	87	216
VIB	VISIT READING PLACES	18	216
VIC	REQUEST EXTRA READING	19	216
VID	TALK ABOUT READING	29	216
	RELATED READING ACTIVITIES -- SEE TEST ITEM ANALYSIS		

F → PROPORTIONS REPORT

MATHEMATICS

CATEGORY	1983	1982	1981	1980
4	55.1	54.3	55.4	53.6
3	26.9	25.4	23.7	22.7
2	14.4	13.2	12.9	15.5
1	3.7	7.1	8.0	8.2
Number Of Pupils	216	229	251	264

STATUS/CHANGE CATEGORY
Status: MODERATE NEEDS
Change: STABLE

READING

CATEGORY	1983	1982	1981	1980
4	82.4	76.3	78.9	78.3
3	11.6	13.5	12.1	9.6
2	6.0	5.8	6.2	7.6
1	0.0	4.4	5.3	7.5
Number Of Pupils	216	229	249	267

STATUS/CHANGE CATEGORY
G → Status: LOW NEEDS
Change: IMPROVING

H → TOTAL NUMBER OF STUDENTS INCLUDED IN THIS SUMMARY
216

7-001

NOTE: In 1980, the MEAP tests were revised and care should be exercised in making longitudinal comparisons. See the MEAP HANDBOOK for further information.

one question on the mathematics test to be included in the mathematics proportions report. Likewise, a pupil must answer at least one question on the reading test to be included in the reading proportions report. Thus, the number of pupils counted in the mathematics and reading proportions reports may differ. At grade 7, the aural mathematics items are excluded when applying the above criterion.

NOTE: The Positive Response to Reading Objectives, the Related Reading Activities, and the Mathematics Correlated Objectives are **not** included in the information presented in the Proportions Report.

The Proportions Report may be used to examine the percentage of students in each indicated category of achievement in the school or district. The categories of achievement provide information in a readily accessible form on the level of overall student performance on the entire set of performance objectives tested. This is in contrast to the other reports provided by the Michigan Educational Assessment Program which show student performance on an objective-by-objective basis. Because of the minimal nature of the performance objectives, it is expected that most beginning fourth, seventh, and tenth graders will be in Category 4 of each subject area.

The particular objectives which need further work can be determined by referring to the body of the School Summary reports. It may be of value to examine selected characteristics of the student population in schools with varying degrees of objective attainment. Such characteristics may be related to the percent of students in each category of achievement within schools. The overview provided by the Proportions Report can be useful when making decisions regarding the allocation of resources and the implementation of remedial programs on a building level.

Status Definition

The "Status" of each school can help determine the extent to which large numbers of students with educational needs are present. Recent research on the characteristics of effective schools has identified some principles which are highly related to student achievement. Many of the principles can be implemented by local school staff and should be used to improve the schooling process. Appendix D provides information about eight research-based principles. The overview provided by the Proportions Report can be useful when making decisions regarding the allocation of resources and the implementation of remedial programs on a building level.

A school's "Status" is given for both reading and math. A school must meet an established criterion for two out of three years (the current year and the two preceding years) in order to fit into a given status classification. The following criteria are used to determine the status for Michigan schools:

High Needs Schools

fewer than 50% of the students in Category 4.

Moderate Needs Schools

50-74% of the students in Category 4.

Low Needs Schools

75% or more of the students in Category 4.

Status Undetermined

The school does not fit any one criterion for two out of the three years.

Insufficient Data

Not enough data available to determine status.

Change Definition

The "Change" ("Improving/Declining") classification was developed to assist educators in following achievement trends in Michigan schools. The purpose of identifying "improving" schools is to recognize the fine efforts local educators are making to improve instruction in the basic skills. Identification of schools in which scores are declining will assist in determination of potential problems. The "Improving/Declining" designation is based on the examination of three years of Michigan assessment results: the current year and the two preceding years. Each school is classified in reading and math separately.

Improving Schools

A school is classified as "Improving", if it meets ALL of the following criteria:

(a) there has been an **increase** of 5% or more in the number of students in Category 4 (year 1 to 3),
(b) there has been a 5% **decrease** in the number of students in Category 1 (year 1 to 3),
(c) in Category 4 attainment was no **lower** in the middle year than in the preceding year, and
(d) in Category 1 attainment was no **higher** in the middle year than in the preceding year.*

Declining Schools

A school is classified as "Declining", if it meets ALL of the following criteria:

(a) there has been a **decrease** of 5% or more in the number of students in Category 4 (year 1 to 3),
(b) there has been a 5% or more **increase** in the number of students in Category 1 (year 1 to 3),
(c) in Category 4 attainment was no **higher** in the middle year than in the preceding year, and
(d) in Category 1 attainment was no **lower** in the middle year than in the preceding year.

*If the percentage of students in Category 1 has been below 5% since the first of the three years, an improving school is identified by the increase of 5% or more in the percentage of students in Category 4.

Stable Schools

All schools with 3 consecutive years of data not classified as "Improving" or "Declining" are classified as "Stable".

Insufficient Data

Not enough data available to determine change.

• **Feeder School Report.** Districts may choose to have their seventh or tenth grade assessment results summarized by feeder school. A feeder school is considered to be any lower grade school that "feeds" students into the school where students are being tested. This option must be selected and the proper coding performed before testing occurs. The Feeder School Code gridded by the student appears on his/her Individual Student Report. All Feeder School Reports are returned to superintendents. They are provided at no cost to the district. The Feeder School Reports are printed on the same form as the District and School Summary reports.

The Feeder School Reports are intended for use by the elementary school(s) which fed students into the junior high or by the junior high(s) which fed students into the high school. Because the Feeder School Report shows how all of the students in the district who attended a particular elementary or junior high school performed on the assessment tests, the feeder school can use this information to analyze the strengths and weaknesses of its instructional programs.

Feeder School Reports should not be used for teacher evaluation since the results reflect an accumulation of skills attained by students over several years with different teachers.

• **Research Code Reports.** Use of the research code option was designed to produce summary reports for as many as 20 different groups of students, depending on the district's selection of categories. Read and interpret the Research Code Report in the same manner as the School or District report. The Research Code gridded by the student appears on his/her Individual Student Report.

• **Test Item Analysis.** The Test Item Analysis is a display of the percentage of students selecting each possible answer for each test question. The Test Item Analysis has been prepared at the classroom, school, and district levels. There is one report for reading and one for mathematics.

The Test Item Analysis can be used to identify specific problems students have in a given area. Large percentages of students choosing the same incorrect answer may indicate an area of learning where special attention is needed. Figure 5 shows an example of the Reading Test Item Analysis at the classroom level. Identification information for the classroom, school, or district is printed at the top of the form, in Section **A**.

Section **B** gives the objective code which matches the objectives to the complete set of the Michigan Department of Education's minimal performance objectives in either communication skills or mathematics. The objectives are grouped by skill area.

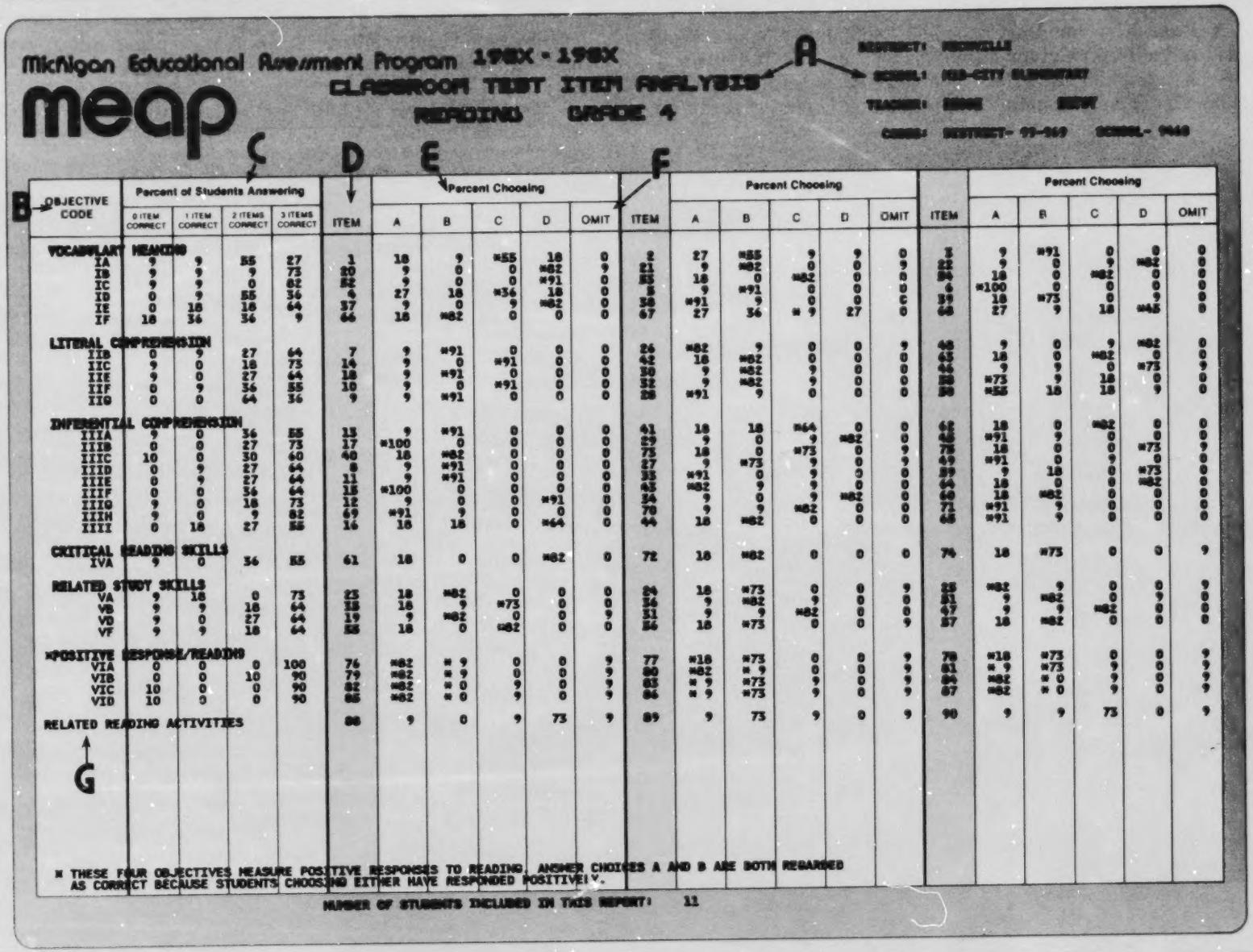
Section **C** shows a percentage distribution of students who answered 0, 1, 2, or 3 items correctly. For each objective, the matching test items are listed in Section **D**, from left to right across the page in the shaded columns.

Section **E** shows the percentage of students selecting each answer choice. An asterisk (*) indicates the correct answer.

Section **F** gives the percentage of students omitting the question.

Section **G** shows the item numbers measuring the Related Reading Activities. There are no correct response designations for these items.

FIGURE 5



Michigan Educational Assessment Program 19XX - 19XX

meap

CLASSROOM TEST ITEM ANALYSIS

READING GRADE 4

A

DISTRICT: [illegible]

SCHOOL: [illegible]

TEACHER: [illegible]

CODES: DISTRICT- [illegible] SCHOOL- [illegible]

B = OBJECTIVE CODE; C = Percent of Students Answering; D = ITEM; E = Percent Choosing; F = Percent Choosing

OBJECTIVE CODE	Percent of Students Answering				ITEM	Percent Choosing					ITEM	Percent Choosing					ITEM	Percent Choosing				
	0 ITEM CORRECT	1 ITEM CORRECT	2 ITEMS CORRECT	3 ITEMS CORRECT		A	B	C	D	OMIT		A	B	C	D	OMIT		A	B	C	D	OMIT
VOCABULARY MEANING																						
IA	9	9	55	27	1	18	9	*55	18	0	2	27	*55	9	9	0	3	9	*91	0	0	0
IB	9	9	9	73	20	9	0	0	*82	9	21	9	*82	0	0	9	22	9	0	9	*82	0
IC	9	9	0	82	32	9	0	0	*91	0	33	18	0	*82	0	0	34	18	0	*82	0	0
ID	0	9	55	36	4	27	18	*36	18	0	5	9	*91	0	0	0	6	*100	0	0	0	0
IE	0	18	18	64	37	9	0	9	*82	0	38	*91	9	0	0	0	39	18	*73	0	9	0
IF	18	36	36	9	66	18	*82	0	0	0	67	27	36	* 9	27	0	68	27	9	18	*45	0
LITERAL COMPREHENSION																						
IIB	0	9	27	64	7	9	*91	0	0	0	26	*82	9	0	0	9	46	9	0	9	*82	0
IIC	9	0	18	73	14	9	0	*91	0	0	42	18	*82	0	0	0	43	18	0	*82	0	0
IIE	9	0	27	64	18	9	*91	0	0	0	30	9	*82	9	0	0	44	9	9	0	*73	9
IIF	0	9	36	55	10	9	0	*91	0	0	32	9	*82	9	0	0	33	*73	9	18	0	0
IIG	0	0	64	36	9	9	*91	0	0	0	28	*91	9	0	0	0	29	*55	18	18	9	0
INFERENTIAL COMPREHENSION																						
IIIA	9	0	36	55	13	9	*91	0	0	0	41	18	18	*64	0	0	42	18	0	*82	0	0
IIIB	0	0	27	73	17	*100	0	0	0	0	29	9	0	9	*82	0	45	*91	9	0	0	0
IIIC	10	0	30	60	40	18	*82	0	0	0	75	18	0	*73	0	9	76	18	0	0	*73	9
IIID	0	9	27	64	8	9	*91	0	0	0	27	9	*73	9	0	9	49	*91	0	9	0	0
IIIE	0	9	27	64	11	9	*91	0	0	0	35	*91	0	9	0	0	39	9	18	0	*73	0
IIIF	0	0	36	64	15	*100	0	0	0	0	45	*82	9	9	0	0	64	18	0	0	*82	0
IIIG	9	0	18	73	12	9	0	0	*91	0	54	9	0	9	*82	0	60	18	*82	0	0	0
IIIH	9	0	9	82	69	*91	9	0	0	0	70	9	9	*82	0	0	71	*91	9	0	0	0
IIII	0	18	27	55	16	18	18	0	*64	0	44	18	*82	0	0	0	68	*91	9	0	0	0
CRITICAL READING SKILLS																						
IVA	9	0	36	55	61	18	0	0	*82	0	72	18	*82	0	0	0	74	18	*73	0	0	9
RELATED STUDY SKILLS																						
VA	9	18	0	73	23	18	*82	0	0	0	24	18	*73	0	0	9	25	*82	9	0	0	9
VB	9	9	18	64	28	18	9	*73	0	0	26	9	*82	9	0	0	31	9	9	*82	0	0
VD	9	0	27	64	19	9	*82	0	0	9	21	9	9	*82	0	0	47	9	9	*82	0	0
VF	9	9	18	64	58	18	0	*82	0	0	56	18	*73	0	0	9	57	18	*82	0	0	0
*POSITIVE RESPONSE/READING																						
VIA	0	0	0	100	76	*82	* 9	0	0	9	77	*18	*73	0	0	9	78	*18	*73	0	0	9
VIB	0	0	10	90	79	*82	* 9	0	0	9	80	*82	* 9	0	0	9	81	* 9	*73	9	0	9
VIC	10	0	0	90	82	*82	* 0	9	0	9	83	* 9	*73	9	0	9	84	*82	* 0	9	0	9
VID	10	0	0	90	85	*82	* 0	9	0	9	86	* 9	*73	9	0	9	87	*82	* 0	9	0	9
RELATED READING ACTIVITIES					88	9	0	9	73	9	89	9	73	9	0	9	90	9	9	73	0	9

G

* THESE FOUR OBJECTIVES MEASURE POSITIVE RESPONSES TO READING. ANSWER CHOICES A AND B ARE BOTH REGARDED AS CORRECT BECAUSE STUDENTS CHOOSING EITHER HAVE RESPONDED POSITIVELY.

NUMBER OF STUDENTS INCLUDED IN THIS REPORT: 11

• **A Pamphlet for Parents.** The explanatory information provided in the Pamphlet for Parents is for use with students and parents. A pamphlet for each student tested is returned to the principal. The information in the pamphlet will help the parent(s) and/or student understand the assessment test results.

The pamphlet gives a brief overview of the development of the Common Goals of Michigan Education, minimal performance objectives and the Michigan Educational Assessment Program. It presents sample mathematics and reading objectives and test questions from each grade level and then answers questions about the Michigan Educational Assessment Program. But, more importantly, the pamphlet provides the individual student results, by skill area, for mathematics and reading. Figure 6 illustrates this section of the pamphlet.

Section **A** gives the name of the school, the student and his/her grade.

Section **B** lists each skill area tested for mathematics. Only the skill areas appropriate to the student's grade level will be printed. (In mathematics there are nine skill areas for grade 10, eight for grade 7, or six for grade 4.)

Section **C**, opposite each skill area designation, gives the number of skills tested and the number passed by the student.

Section **D** gives the total number of mathematics skills tested and the total number passed by the student.

Section **E** presents the "Percent of Mathematics Skills Passed". This is: (Total # of Skills Passed/# Tested) x 100.

Sections **B-E** are repeated for reading. However, the reading skill areas tested are the same at all three grade levels.

Arabic and Spanish translations of the **Pamphlet for Parents** are available by request from: MEAP, Box 30008, Lansing, MI 48909.

Although the **Pamphlet for Parents** can be sent home by mail, a meeting with the teacher or a counselor to discuss the results is still strongly recommended.

FIGURE 6

OBJECTIVES

Educational specialists throughout the state developed and refined the minimum objectives with the cooperation of parents and local board members. At the end of this process, the State Board of Education received and approved minimum objectives in Art, Communication Skills, Foreign Language, Health, Mathematics, Music, Physical Education, Pre-Primary, Science, and Social Studies. These objectives have been sent to all Michigan school districts so that they may be a resource for local program development.

MINIMUM

Of course, the performance objectives do not represent a complete curriculum. They represent some minimum basic skills which children need to learn as they progress from kindergarten through 9th grade. Local school people must also design their own objectives based on the needs and abilities of the local children.

WHAT IS IN THE TEST?

The reading and mathematics tests measure minimum skills which a student should have learned by the time the tests are given. Each skill is tested with a set of 3 questions. If the student misses no more than one question in the set, the skill has been attained.

WHY DOES MY CHILD NEED TO TAKE THE TEST?

The test helps you, the teachers, and your child see the minimum mathematics and reading skills which have or have not been learned. Children in Michigan are tested in the 4th, 7th, and 10th grades. The tests act as a yearly educational health check-up on Michigan education in reading and mathematics.

HOW CAN I TELL IF MY CHILD DID WELL ON THE TEST?

If a child has passed more than 75% of the skills, the child has done "acceptably well."

WHAT CAN I DO TO HELP MY CHILD WITH SKILLS HE/SHE DID NOT PASS?

You should discuss your child's test results with the classroom teacher or counselor. An individual program should then be developed to help your child learn the skills which were not attained. Below is a list of some practical things you can do to help your child learn the basic skills in math and reading.

- Show involvement and interest in the experiences your child has in school; such interest helps to show the importance of school.
- Express interest in your child's assignments.
- Designate a place and plan a time for study at home.
- Encourage your child to attend school regularly.
- Encourage your child to do his/her best in school.
- Ask the teacher if there are activities you could do at home to strengthen skill development.

YOUR CHILD'S TEST RESULTS

198X-8X

School: MID-CITY HIGH 9144
Name: GRACE N KING Grade: 10

A → School/Name

MATHEMATICS

C → Number of Skills Tested / Passed

Skill Area Tested	Number of Skills Tested:	Passed:
Whole Numbers	2	0
Decimals	6	6
Fractions	8	7
Ratio, Proportion & Percent	2	2
Metric Measurement	2	2
Non-Metric Measurement	3	3
Geometry	1	1
Probability & Statistics	2	2
Equations, Expressions, Graphs	2	2
TOTAL	28	25

B → Metric Measurement

D → Passed: 25

E → X MATH SKILLS PASSED: 89%

READING

Skill Area Tested	Number of Skills Tested:	Passed:
Vocabulary Meaning	5	5
Literal Comprehension	5	5
Inferential Comprehension	8	7
Critical Reading Skills	3	3
Related Study Skills	3	2
TOTAL	24	22

X READING SKILLS PASSED: 92%

SAMPLE OBJECTIVES AND TEST ITEMS

The mathematics skill area of Whole Numbers contains some objectives that are tested at grade 4, some at grade 7, and some at grade 10. The following shows a Whole Numbers math objective and test item from each grade level. (Remember, your child sees only the test item, not the objective description.)

Grade 4 Whole Numbers Objective: Given addition problems involving a two-digit number plus a two-digit number requiring no regrouping (carrying), the learner will find the sums.

Test Item: Add: 54 + 34 =
Answer Choices: A 28 B 30 C 88 D 98

Grade 7 Whole Numbers Objective: Given a three-digit number (without zeros), the learner will subtract a three-digit number with regrouping (borrowing).

Test Item: Subtract: 843
− 271

Answer Choices: A 562 B 1,114 C 572 D 632

Grade 10 Whole Numbers Objective: Given a division exercise with a two-, three-, or four-digit dividend and a two-digit divisor, with or without remainder, the learner will determine the quotient.

Test Item: Find the Answer: 28 ⟌ 537
Answer Choices:
A 18 R23 B 19 R5 C 21 R9 D 181 R5

The following reading objective in the skill area of Vocabulary Meaning is tested at grades 4, 7, and 10. Note that the concept becomes increasingly difficult as reflected in the test items at the higher grades.

Reading Objective (Grades 4, 7, and 10): The student will be able to determine the meaning of a word in a sentence whose meaning has been affected by (common) prefixes.

Grade 4 Test Item:
Sometimes we **misread** words. The best meaning for the prefix **mis-** is
A well. B just. C never. D wrongly.

Grade 7 Test Item:
The **predawn** fire blazed out of control. The prefix **pre-** means
A now. B after. C during. D before.

Grade 10 Test Item:
International laws affect all nations. The prefix **inter-** means
A within. B behind. C beside. D between.

APPENDIX B

MEAP TEST CONTENT*

OBJECTIVES AND EXAMPLE ITEMS FOR FOURTH GRADE READING

Objective Code

IA Determine the meaning of a word in a sentence whose meaning has been affected by prefixes.

Sometimes we misread words.

The best meaning for the prefix mis- is

A well.

B just.

C never.

D wrongly.

IB Determine the meaning of a word in a sentence whose meaning has been affected by suffixes.

The hardest job was cleaning the garage.

Hard plus est means

A least hard.

B partly hard.

C most hard.

D not hard.

IC Determine the meaning of a word that has multiple meanings, depending on its use in a sentence.

Tom wants to be in the school play.

In this sentence, play means

A to make music.

B to make-believe.

C to take part in a game.

D a story that is acted out.

ID Identify a word that has a similar meaning to another word (identifying synonyms).

The famous movie star was on television last night.

In this sentence, famous means

A smart.

B pretty.

C friendly.

D well-known.

IE Identify a word that has an opposite meaning to another word (identifying antonyms).

Playing with matches is a foolish thing to do.

The opposite of foolish is

A hot.

B stupid.

C wise.

D simple.

IF Determine the meaning of a word on the basis of the context of a sentence.

The boy whint the money to see how much he had.

In this sentence, whint means

A hid.

B found.

C tossed.

D counted.

IIB Identify the stated main idea within a selection.

What is the main idea of this story?

A Icebergs are 500 feet high.

B Icebergs are Floating Giants.

C Icebergs are seventy to eighty miles long.

D Icebergs are not the same size.

IIC Identify details that support the main idea of a section.

The story says that John

A plays tennis.

B enjoys hiking.

C likes to paint.

D writes stories.

IIE Identify the sequence within a selection.

To build the tree house, the first thing the children did was to

A climb the tree.

B bring wood over to the tree.

C carry wood up into the tree.

D draw a picture of a tree house.

IIF Identify stated cause and effect relationships within a selection.

Because of the lightning bolt, the plane

A burst into flames.

B lost its left wing.

C plunged into the water.

D crashed before reaching water.

IIG Identify stated likenesses and differences within a selection.

Icebergs are like giants because they

A are huge.

B are cruel.

C move slowly.

D appear in fairy tales.

IIIA Infer the main idea of a selection.

What is the main idea of this story?

A There are heavy rain storms in Africa.

B Being a good neighbor is important.

C Men and boys in Nigeria often play together.

D African houses are made of straw.

*The objectives are provided in this handbook for the convenience of the user; they do not appear in the actual Student Assessment booklets. The items shown are not actual items from the Assessment Tests. Instead, they are representative of the type of item used to measure a given objective. Reference must be made to a Student Assessment Booklet for the test questions themselves. Where reading items are referenced to a passage, table of contents, etc., only the items are given here. Example items are not given for the Positive Response to Reading Objectives. In the interest of economy, the test items displayed in this handbook have been photographically reduced to 65% of the actual size of the items appearing in the Student Assessment Booklets.

IIIB Infer the cause and effect relationships within a selection.

You should wear warm clothes when you play hockey because

A the ice is slippery.

B flying pucks can be dangerous.

C a fall on the ice can happen fast.

D most hockey games are played in cold weather.

IIIC Predict the probable outcome of a selection.

What will probably happen?

A Marcie will keep skating.

B Marcie will need new ice skates.

C Marcie will become a good skater.

D Marcie will fall through the ice.

IIID Infer details that support the main idea of a selection.

In this story, some icebergs are said to be as large as

A ships.

B waves.

C houses.

D mountains.

IIIE Infer the sequence within a selection.

After Cliff pulled the ring on his parachute,

A it did not open.

B he floated through the sky.

C he leaped out of the plane.

D it caught on the wing of the plane.

IIIF Infer likenesses and differences within a selection.

Mr. Ume's old house and new house were both

A made of earth.

B two stories high.

C ruined in a storm.

D painted white.

IIIG Draw conclusions from given information.

From the end of the story we can guess that Tom and Tracy felt

A calm.

B angry.

C brave.

D afraid.

IIIH Identify relationships of words (analogies).

Crawl is to baby as walk is to

A run.

B child.

C jog.

D infant.

IIII Make inferences about characters in a story.

From this story, we know that John probably

A has few friends.

B is shy and quiet.

C is good at sports.

D watches a lot of TV.

IVA Determine the author's purpose for a selection.

This poem was written to

A make you angry.

B make you smile.

C tell you about dragons.

D tell you about laundromats.

VA Identify the major use of dictionaries, tables of contents, and glossaries.

Which of these would tell you how many chapters your science book has?

A atlas

B dictionary

C encyclopedia

D table of contents

VB Locate information within reference materials using dictionaries, tables of contents and glossaries.

How many meanings does the word delay have?

A 1

B 2

C 3

D 4

VD Summarize a selection.

Which sentence tells this story best?

A Sally and Ted invited their friends over to play in a tree house.

B Sally's mother fixed a delicious lunch for the children after they finished the tree house.

C Sally and Ted spent all morning building a tree house and all afternoon playing in it.

D Sally and Ted loved to play monsters, monkeys, and other pretend games in the tree house.

VF Alphabetize words correctly through the second letter.

boast

Which word comes after boast in alphabetical (A-B-C) order?

A blow

B cost

C about

D cabin

**VIA Reading materials of her/his choice during free time, both in school and at home.

**VIB Going frequently to places where reading materials are available, such as libraries, reading rooms, book sales, and book exchanges.

**VIC Requesting reading materials in addition to those assigned by the teacher.

**VID Responding to the opportunity to talk about and/or discuss what he/she has read.

**VIA, B, C, and D are Positive Response to Reading Objectives.

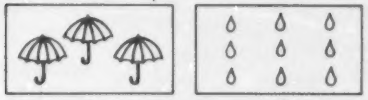
OBJECTIVES AND EXAMPLE ITEMS FOR FOURTH GRADE MATHEMATICS

Core Objectives Test

Objective Code

10-5 Given two sets, one set with one to three members and the other with eight to ten members, the learner, using only visual inspection will indicate the set with *fewer* members.

Which set has fewer members?



A B

10-7 Given any three consecutive sets of objects consisting of one to five members, the learner will indicate the set that has the *fewest* members.

Which set has the fewest members?

A B C

16-2 Given a hundred chart with the first twenty numbers and multiples of ten filled in, the learner will write in any portion of the chart as requested.

Which numbers belong in the shaded area?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
									30
									40
									50
									60
									70
									80
									90
									100

A 29, 39, 49, 59, 69, 79, 89, 99, 109

B 911, 912, 913, 914, 915, 916, 917, 918, 919

C 91, 92, 93, 94, 95, 96, 97, 98, 99

D 901, 902, 903, 904, 905, 906, 907, 908, 909

16-4 Given a two-digit numeral, the learner will write it in expanded notation in two ways: first by using words and then by using numerals.

65 means

A 6 hundreds + 5 tens

B 6 hundreds + 5 ones

C 6 tens + 5 ones

D 5 tens + 6 ones

16-7 Given any three-digit numeral, the learner will write expanded notation by using place value words.

146 means

A 1 hundred + 4 tens + 6 ones

B 1 ten + 4 ones + 6 hundreds

C 6 hundreds + 4 tens + 1 one

D 4 hundreds + 1 ten + 6 ones

16-8 Given any three-digit numeral, the learner will write expanded notation by using numerals.

892 means

A 8 + 9 + 2

B 80 + 90 + 20

C 200 + 90 + 8

D 800 + 90 + 2

16-9 Given 2 three-digit numerals which have the same digits but in different positions, the learner will determine which is greater and which is less.

Which is less?

A 268

B 286

16-10 Given a random list of two and three-digit numerals, the learner will arrange them in ascending order.

Which numbers are in order from smallest to largest?

A 403, 123, 98, 45

B 123, 403, 45, 98

C 45, 123, 98, 403

D 45, 98, 123, 403

17-1 Given a counting sequence of two to four numbers, the learner will indicate the next number in sequence.

Which number comes next? 30, 35, 40, _____

A 25

B 45

C 50

D 55

23-1 Given addition exercises involving a two-digit number plus a one-digit number requiring no regrouping (carrying) written in either vertical or horizontal form, the learner will find the sums. The learner may use aids.

$$\begin{array}{r} 12 \\ +\ 5 \\ \hline \end{array}$$

A 15

B 16

C 17

D 18

23-3 Given addition problems involving a two-digit number plus a two-digit number requiring no regrouping (carrying), the learner will find the sums. The learner may use aids.

$54 + 34 = \square$

A 28

B 30

C 88

D 98

24-1 Given addition exercises involving a two-digit number plus a one-digit number requiring regrouping (carrying), the learner will find the sums. The learner may use aids.

$$\begin{array}{r} 17 \\ +\ 6 \\ \hline \end{array}$$

A 213

B 113

C 23

D 13

24-2 Given addition problems involving 2 two-digit numbers requiring regrouping (carrying), the learner will find the sums. The learner may use aids.

$$\begin{array}{r} 88 \\ +\ 76 \\ \hline \end{array}$$

A 154

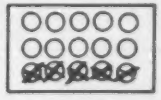
B 1,514

C 164

D 1,614

29-2 Given a set of objects or pictures showing a subtraction relationship with combinations to eighteen, the learner will write an appropriate number sentence.

Which number sentence below tells about this picture?



A 15 - 5 = 10

B 7 + 8 = 15

C 10 - 5 = 5

D 5 + 5 = 10

30-1 Given a two-digit number, the learner will subtract a one-digit number with no regrouping (borrowing). The learner may use aids.

$$\begin{array}{r} 69 \\ -\ 8 \\ \hline \end{array}$$

A 51
B 59
C 61
D 77

30-2 The learner will subtract two two-digit numbers with no regrouping (borrowing). The learner may use aids.

$$\begin{array}{r} 86 \\ -\ 42 \\ \hline \end{array}$$

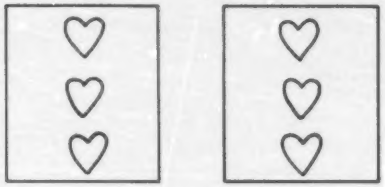
A 24
B 42
C 44
D 48

31-1 Given a two-digit number, the learner will subtract a one-digit number with regrouping (borrowing). The learner may use aids.

$$\begin{array}{r} 24 \\ -\ 7 \\ \hline \end{array}$$

A 13
B 17
C 23
D 27

35-3 Given a collection of equivalent sets (less than ten), the learner will write a multiplication sentence to describe it.



Which number sentence tells about these pictures?

A 6×1
B 1×6
C 2×3
D $6 + 1$

35-6 Given a multiplication sentence, the learner will represent it as a repeated addition sentence. (Do not include zeroes or ones in repeated addition.)

Which means the same as $2 \times 4 = 8$?

A $2 + 2 = 8$
B $2 + 4 = 8$
C $4 + 2 = 8$
D $4 + 4 = 8$

36-1 The learner will name the product of any number and one.

$$\begin{array}{r} 45 \\ \times\ 1 \\ \hline \end{array}$$

A 54
B 44
C 46
D 45

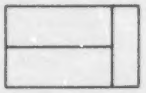
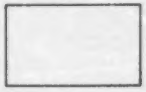
36-3 Given two factors, both of which are zero through five, the learner will give the product from memory.

$5 \times 5 = \square$

A 9
B 16
C 25
D 20

79-4/6 Given several objects, some divided into three/four *congruent* parts, and some divided into three/four *noncongruent* parts, the learner will:
(a) determine which objects have been divided into the three/four congruent parts, and
(b) tell the fraction name for each part upon request.

Which object is divided into three parts of the same size and shape?

A
C 
B 
D

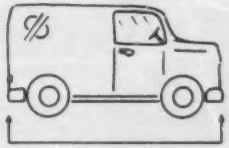
79-13 Given illustrations of one-half, one-third, and one-fourth of the regions shaded, the learner will tell the correct fraction in each case.

Which part is shaded?

A $\frac{1}{3}$
B $\frac{1}{4}$
C $\frac{1}{2}$
D 4

107-8 Given a measuring stick scaled in centimeters only and an object, the learner will measure the length of the object to the nearest centimeter.

How long is the truck?

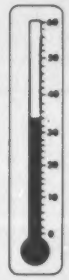


A 3 cm
B 5 cm
C 7 cm
D 9 cm

143-2 Given a Celsius thermometer scaled in two degree intervals, the learner will read and record the temperature to within two degrees using the degree (°) symbol.

What is the temperature?

A 24°
B 34°
C 30°
D 40°



147-6 Given a clock face with the reading of ____ o'clock, the learner will identify the appropriate time to the hour.

A 6:00
B 8:00
C 9:00
D 12:00

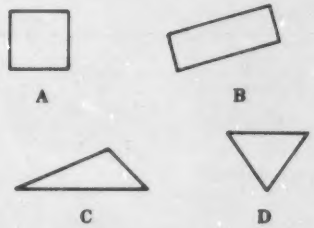
158-1 Given an assortment of cut-out shapes including squares, triangles, rectangles and circles of various sizes randomly arranged, the learner will select a given shape as requested.

What is the name of this figure?

A triangle
B rectangle
C square
D circle

163-1 Given a simple geometric figure and a set of simple geometric figures, the learner will identify those which are the same size and shape.

Which picture is the same size and shape as



A B C D

17-3 Given a number of less than three digits, the learner will identify the number as even or odd.

88

A Even

B Odd

28-3 Given two sets with less than ten objects each, one with more objects than the other, the learner will state how many more members it has.

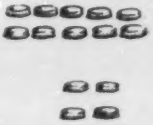
How many more bottle caps are in the larger group than in the smaller group?

A 4

B 6

C 10

D 14



29-4 Given subtraction exercises in horizontal and vertical forms, using numbers to eighteen, the learner will find the difference. The learner may not use aids.

$$\begin{array}{r} 17 \\ -\ 3 \\ \hline \end{array}$$

A 12

B 13

C 14

D 15

31-2 The learner will subtract 2 two-digit numbers. The learner may use aids.

$43 - 28 = \square$

A 13

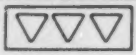
B 17

C 23

D 15

35-4 Given a set of objects, the learner will make another set that will have two times as many objects.

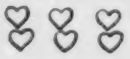
Which group below has two times as many members as this group?



A

B

C



D

36-2 The learner will name the product of any number and zero.

$$\begin{array}{r} 81 \\ \times\ 0 \\ \hline \end{array}$$

A 81

B 0

C 18

D 810

156-3 Given pictures of real objects or various shapes, the learner will identify circles, triangles, squares and rectangles as requested.

Which is a rectangle?

A

B

C

D

OBJECTIVES AND EXAMPLE ITEMS FOR SEVENTH GRADE READING

Objective Code

IA Determine the meaning of a word in a sentence whose meaning has been affected by prefixes.

The predawn fire blazed out of control

The prefix pre- means

A now.

B after.

C during.

D before.

IC Determine the meaning of a word that has multiple meanings, depending on its use in a sentence.

Those dogs are big and range in color from gray and white to solid black.

A vary

B roam

C graze

D line up

ID Identify a word that has a similar meaning to another word (identifying synonyms).

The initial stop on the trip was Detroit.

What word means almost the same as initial?

A best

B first

C scenic

D shortest

IE Identify a word that has an opposite meaning to another word (identifying antonyms).

The delicate flower bloomed for one day.

The opposite of delicate is

A vast.

B fragile.

C tough.

D plastic.

IF Determine the meaning of a word on the basis of the context of a sentence.

The floor in the old house was too weak to dilp the weight of our piano.

A lift

B express

C cave in

D support

IIB Identify the stated main idea within a selection.

The main topic of this passage is how

A rabbits and deer l've.

B deer escape from their enemies.

C protective coloring aids in animal survival.

D mother animals teach their young how to survive.

IIC Identify details that support the main idea of a selection.

Why was Jake Cooley hard of hearing?

A He was getting old.

B He didn't like loud noises.

C His ear had been hurt in a fall.

D He had lived alone in the mansion.

IIE Identify the sequence within a selection.

Which one of these shows the order of the events in the story?

A Mr. Cochran asked Jake if he had seen the children.
Marty and Jenny arrived at the mansion.
Marty and Jenny asked Mr. Cooley many questions.
Marty and Jenny raced down the hill.

B Marty and Jenny arrived at the mansion.
Marty and Jenny asked Mr. Cooley many questions.
Marty and Jenny raced down the hill.
Mr. Cochran asked Jake if he had seen the children.

C Marty and Jenny raced down the hill.
Mr. Cochran asked Jake if he had seen the children.
Marty and Jenny arrived at the mansion.
Marty and Jenny asked Mr. Cooley many questions.

D Marty and Jenny asked Mr. Cooley many questions.
Marty and Jenny raced down the hill.
Marty and Jenny arrived at the mansion.
Mr. Cochran asked Jake if he had seen the children.

IIF Identify stated cause and effect relationships within a selection.

Van Helmont expected the soil to weigh less because

A some had blown away.

B it had been dried out.

C the willow weighed more.

D it had given up its food substances.

IIG Identify stated likenesses and differences within a selection.

One difference between a helicopter and an airplane is that the helicopter

A has four engines.

B has smaller wings.

C must land on a runway.

D can stand still in the air.

IIIA Infer the main idea of a selection.

The main topic of this passage is

A sled dogs as pets.

B training dog teams.

C Newfoundlands and huskies.

D characteristics of sled dogs.

IIIB Infer the cause and effect relationships within a selection.

The birds were set free because they had learned

A to find the ranch in the mountains.

B to hunt the toy rabbit with meat attached.

C as much as the trainers thought they needed.

D as much as they knew when they came to the zoo.

IIIC Predict the probable outcome of a selection.

What will most likely happen to Curt?

A He'll miss the game.

B He'll bump into someone else.

C He'll forget where the picnic is.

D He'll be asked to leave the store.

IIID Infer details that support the main idea of a selection.

One difference between the fawn and the baby rabbit is that the

A rabbit must be still to keep safe.

B fawn must blend with its background for safety.

C rabbit has white spots which fade as it grows up.

D fawn will lose its protective coloring when it is grown.

IIIE Infer the sequence within a selection.

After Van Helmont planted the branch, he

A added food substances.

B weighed the tub.

C dried the soil.

D observed it for five years.

IIIG Draw conclusions from given information.

Because the soil weighed almost the same, Van Helmont probably decided

A to plant more willow branches in different tubs.

B that the tub was heavier than it should have been

C to use a larger tub of soil for his next experiment.

D that the food substances came from outside the soil.

IIIH Identify relationships of words (analogies).

Feathers are to birds as scales are to

A weight.

B fish.

C claws.

D turtles.

IVA Determine the author's purposes for a selection.

The author's main purpose in writing this passage is to

A make a hero of Adolph Sutro.

B explain the work of a silver miner.

C show the miserable conditions in the mines.

D get you to donate money for the miners' widows.

IVC Determine the author's view-point from a selection.

How did the author feel about the "silver kings"?

A He pitied them.

B He admired them.

C He disliked them.

D He was afraid of them.

VA Identify the major uses of dictionaries, encyclopedias, atlases, newspapers, magazines, telephone books, tables of contents, glossaries, indexes, maps, graphs, charts, and tables.

Where should you look to find which crops are raised in Mexico?

A newspaper

B dictionary

C world globe

D encyclopedia

VB Locate information within reference materials using dictionaries, encyclopedias, atlases, newspapers, magazines, telephone books, tables of contents, glossaries, indexes, maps, graphs, charts, and tables.

In which part of a newspaper would you find an article with the title "Speaking of Inflation . . ."?

A want ads

B entertainment page

C advertisements

D editorial page

VD Summarize a selection.

Which is the best summary of the story?

A Sally burned all the toast she was making. Ernie thought it was all a big joke.

B Ernie and Sally's old toaster shot the bread out like a rocketship. Ernie was annoyed and decided to get a new toaster.

C Ernie was angry because the toaster was broken. Sally liked the old toaster because they could play space-flight with it.

D Ernie and Sally had a fight about their old toaster. Ernie agreed it was like a launching pad, but he did not want a new one.

VF Use alphabetizing skills to locate information in common references.

Which set of words is in alphabetical order?

A harsh
harvest
hardly
harpoon

B harpoon
harsh
harvest
hardly

C hardly
harpoon
harsh
harvest

D harvest
harsh
hardly
harpoon

**VIA Reading materials of her/his choice during free time, both in school and at home.

**VIB Going frequently to places where reading materials are available, such as libraries, reading rooms, book sales, and book exchanges.

**VIC Requesting reading materials in addition to those assigned by the teacher.

**VID Responding to the opportunity to talk about and/or discuss what he/she has read.

**VIA, B, C, and D are Positive Response to Reading Objectives.

OBJECTIVES AND EXAMPLE ITEMS FOR SEVENTH GRADE MATHEMATICS

Core Objectives Test

Objective Code

18-1 Given a four-digit number not including zeroes, the learner will give the number that is 10, 100, or 1000 more or less without using formal addition or subtraction. (Regrouping may be included.)

What number is 1,000 more than 2,314?

A 2,314

B 3,214

C 3,314

D 3,414

19-2 Given a number orally, the learner will write the four-digit numeral.

A 2,007

B 2,070

C 702

D 2,700

25-3 Given addition exercises involving two or three addends with up to six digits, with or without regrouping, the learner will find the sums, using any technique.

```
  12,031
 436,572
+ 59,513
```

A 497,116

B 508,116

C 507,126

D 498,216

26-3 Given an addition exercise involving three-digit addends, the learner will estimate the answer by rounding the addends to the closest multiple of one hundred.

```
 312
 479
+ 787
```

A 1,200

B 1,400

C 1,600

D 1,700

32-1 Given a three-digit number (without zeroes), the learner will subtract a two-digit number with regrouping (borrowing).

```
 815
- 94
```

A 721

B 881

C 909

D 819

32-2 Given any three-digit number (including numbers with one or two zeroes), the learner will subtract a two- or three-digit number. The learner may use aids.

```
 783
- 97
```

A 586

B 686

C 714

D 880

39-1 Given a two-digit number to be multiplied by a one-digit number, the learner will write the product. The learner may use aids.

83 × 6 = □

A 488

B 483

C 498

D 481

39-3 Given 2 two-digit numbers, the learner will determine the product.

```
  79
× 13
```

A 1,027

B 1,007

C 927

D 1,057

44-7 Given an exercise with a dividend of three- or four-digits, and a one-digit divisor with or without remainders, the learner will determine the quotient.

3 | 2,169

A 643

B 723

C 733

D 853

45-1 Given an appropriate word problem read by the teacher involving the division algorithm, the learner will solve the problem.

There are 12 people who want to form car pools to go to work; 4 people can ride in each car. How many cars will they need?

A 48

B 8

C 3

D 16

63-2 Given a decimal fraction of no more than three places, the learner will name the place value of each digit, without the use of a place value chart or aids.

.923

A 9 tenths, 2 hundredths, 3 thousandths

B 9 hundreds, 2 tens, 3 ones

C 9 ones, 2 tens, 3 hundreds

D 9 thousandths, 2 hundredths, 3 tenths

68-6 Given a decimal addition or subtraction problem in horizontal or vertical form with whole numbers, tenths, and hundredths, the learner will find the sum or difference. The learner may use aids or models.

3.84 + 7.29 = □

A 11.13

B 11.03

C 3.45

D 4.65

69-1 Given an appropriate verbal problem involving addition and subtraction of decimal numbers involving only tenths, the learner will solve the problem.

Bob walked 0.7 of a kilometer to Al's house and from there 0.6 of a kilometer to his own home. How many kilometers did he walk?

A .013

B .13

C 1.3

D 13.0

80-2 Given a region or strip divided into ten or fewer parts, some of which are shaded, the learner will write the appropriate fraction to describe the shaded portion.

A $\frac{3}{4}$

B $\frac{4}{7}$

C $\frac{4}{3}$

D $\frac{4}{7}$

81-3 Given a fraction, the learner will write equivalent fractions. The learner may use aids.

$\frac{1}{2}$ = □

A $\frac{4}{7}$

B $\frac{4}{8}$

C $\frac{4}{3}$

D $\frac{11}{11}$

85-3 Given two mixed numbers with like denominators, the learner will write the sum. (No regrouping or reducing required. The learner may not use aids.)

$3\frac{4}{10} + 2\frac{4}{10}$ = □

A $1\frac{4}{10}$

B $5\frac{7}{10}$

C $5\frac{4}{10}$

D $5\frac{4}{20}$

90-3 Given a whole number less than ten, a mixed number or a fraction, the learner will find the difference.

$9 - \frac{1}{8}$

A 8

B $8\frac{7}{8}$

C $8\frac{1}{8}$

D $9\frac{1}{8}$

94-2 Given a number sentence in the form: "Unit fraction of whole number = ?" using denominators less than ten and the whole number a multiple of the denominator, less than forty, the learner will find the answer without the use of aids.

$\frac{1}{3}$ of 15 = ☐

A $\frac{1}{5}$

B $\frac{1}{45}$

C 5

D 45

95-3 Given two unit fractions with denominators of ten or less, the learner will compute the product without the use of aids.

$\frac{1}{6} \times \frac{1}{4} =$ ☐

A $\frac{1}{24}$

B $\frac{7}{24}$

C $\frac{1}{10}$

D $\frac{7}{10}$

109-2/3 Given any whole number of meters (one through nine), the learner will state the equivalent number of centimeters.

Given any multiple of 100 centimeters (100 through 900), the learner will state the equivalent number of meters.

700 centimeters = ☐ meters

A 70 000

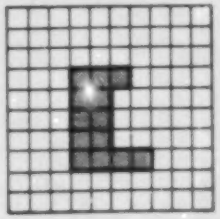
B 7000

C 70

C 70

D 7

119-2 Given a region located on a square grid, the learner will approximate the area by counting the number of square units.



A 11 square units

B 12 square units

C 13 square units

D 16 square units

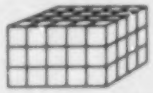
127-1 Given a drawing of a rectangular solid divided into units with linear dimensions less than or equal to five units, the learner will name the number of cubic units in the solid.

A 39

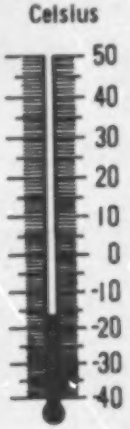
B 47

C 48

D 60



144-1 Given a Celsius thermometer calibrated in one or two degree increments, the learner will read and record temperatures to the nearest degree.



A -16°

B -11°

C -24°

D 16°

148-3 Given a numbered clock face with hands on it, the learner will write the time in time notation of five minute intervals.

What time does this clock show?

A 4:20

B 4:25

C 5:04

D 5:20

152-2 Given two money values, the learner will add or subtract using the dollar sign and decimal notation. The learner may choose to use play money.

$7.95
− 2.38

A $ 5.57

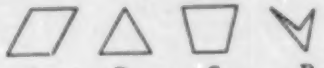
B $ 5.63

C $ 5.67

D $10.33

157-1 Given a set of polygons including quadrilaterals, the learner will identify and name a parallelogram, a square and a rectangle.

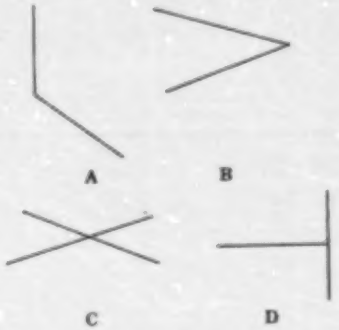
Which figure is a parallelogram?



A B C D

160-1/2 Given models of two intersecting lines, the learner will indicate whether they are perpendicular.

Which pair of lines are perpendicular?



A B C D

170-2 Given a bar graph, the learner will interpret it.

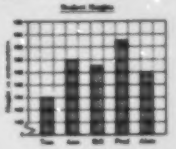
Who is about 149 centimeters tall?

A Tom

B Ann

C Bill

D Alice



18-2 Given any four-digit number, the learner will write expanded notation, first by using place value words and then by using numerals.

8,143 =

A 8 thousands + 43 tens
OR 8,000 + 430

B 8 hundreds + 4 tens + 3 ones
OR 800 + 40 + 3

C 8 thousands + 1 hundred + 4 ones + 3 ones
OR 8,000 + 100 + 4 + 3

D 8 thousands + 1 hundred + 4 tens + 3 ones
OR 8,000 + 100 + 40 + 3

40-3 Given two whole numbers, each less than 1000, the learner will estimate the product.

Which is the best estimate?

$$\begin{array}{r} 502 \\ \times\ 312 \\ \hline \end{array}$$

A 150,000

B 18,000

C 200,000

D 400,000

43-2 Given a division sentence, the learner will write a related multiplication sentence.

15 ÷ 3 = 5 can be written as which multiplication sentence below?

A 5 × 3 = 15

B 15 × 3 = 45

C 15 × 5 = 75

D 3 × 15 = 5

63-1 Given a place value chart and a numeral of no more than three decimal places, the learner will indicate the value of each digit in the numeral.

What is the place value of 9 in 67.139?

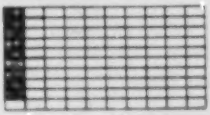
A Hundredths

B Thousandths

C Tenths

D Ones

64-3 Given a model of a fraction illustrating hundredths, the learner will identify, say and write the decimal fraction and common fraction which is illustrated.



A .09

B .19

C .90

D .91

90-3 Given a whole number less than ten, a mixed number or a fraction, the learner will find the difference.

$9 - 1\frac{1}{4} = \square$

A $8\frac{1}{4}$

B $7\frac{3}{4}$

C $8\frac{3}{4}$

D $9\frac{1}{4}$

109-4 Given any whole number of centimeters (1 through 1000), the learner will state the equivalent number of meters.

200 centimeters is equal to how many meters?

A 0.02

B 0.2

C 2

D 20

OBJECTIVES AND EXAMPLE ITEMS FOR TENTH GRADE READING

Objective Code

IA Determine the meaning of a word in a sentence whose meaning has been affected by common prefixes.

International laws affect all nations.

The prefix inter- means

A within.

B behind.

C beside.

D between.

IC Determine the meaning of a word that has multiple meanings, depending on its use in a sentence.

The players were touched by the huge crowd that came to honor them.

A crazed

B moved

C weakened

D reached

ID Identify a word that has a similar meaning to another word (identifying synonyms).

The President discussed amnesty for the deserters.

A favor

B pardon

C prison

D opportunity

IE Identify a word that has an opposite meaning to another word (identifying antonyms).

The weary woman sank heavily into her chair.

The opposite of weary is

A old.

B happy.

C tired.

D rested.

IF Determine the meaning of a word on the basis of the context of a sentence.

Jane's directions were vague, but I could do the job because your explanation was toblat.

A confusing

B secure

C incomplete

D thorough

IIB Identify the stated main idea within a selection.

The main idea of this selection is that

A Americans suffer from malnutrition.

B children's breakfast cereals contain too much sugar.

C pre-sweetened cereal is more expensive than unsweetened.

D sugar provides us with empty calories.

IIC Identify details that support the main idea of a selection.

Franklin was impressed by the way citizens were fighting fires in

A Boston.

B Philadelphia.

C Pennsylvania.

D The Union Fire Company.

IIE Identify the sequence within a selection.

The second unusual event was that the Resolute

A was abandoned.

B became locked in ice for 21 days.

C sailed 2,000 miles by itself.

D was restored by the United States.

IIF Identify stated cause and effect relationships within a selection.

What is one cause of our losing battle against insects?

A Insects are too small to see.

B Insects are too well organized.

C Insects are too numerous to fight.

D Insects have extremely short lives.

IIG Identify stated likenesses and differences within a selection.

The article states that wealthy families and poor families

A have different eating habits.

B have different economic problems.

C both suffer equally from malnutrition.

D both eat the same amount of cereal each year.

IIIA Infer the main idea of a selection.

The main idea of this passage is that earthworms

A can be raised on worm farms.

B are palatable and chewy.

C are tireless.

D are used for fertilizer.

IIIB Infer the cause and effect relationships within a selection.

Buying a used bicycle may be unwise because

A the tires will need to be replaced.

B the cost of repairs may be too high.

C rusty parts may make it dangerous to ride.

D there is usually no guarantee against faulty parts.

IIIC Predict the probable outcome of a selection.

What do you predict will probably happen?

A The hunters will go on a few more days.

B The elephants will return to escape the November rains.

C The hunters will return home as soon as possible.

D The natives will obtain the ivory while Mr. Bowie stays in camp.

IIID Infer details that support the main idea of a selection.

This article suggests that people smile in order to

A make other people happy.

B hide their real feelings.

C show that they are happy.

D show their interest in other people.

IIIE Infer the sequence within a selection.

When did the parents first begin to write letters to the newspapers?

A After they noticed that children were playing in the streets

B after two boys were killed while playing baseball in the streets

C after several children playing in the streets were badly injured.

D after the city government provided large sums of money for playgrounds.

IIIF Infer likenesses and differences within a selection.

How are modern fire departments different from those of Franklin's day?

A They are regularly paid.

B They are less efficient.

C They are in small towns.

D They are mostly volunteer.

IIIG Draw conclusions from given information.

According to this passage, we can conclude that

A angry citizens act hastily.

B public opinion is dangerous.

C the truck driver did not see the children.

D strong public opinion can produce results.

IIIH Identify relationships of words (analogies).

Earth is to continent as galaxy is to

A star.

B moon.

C world.

D universe.

IVA Determine the author's major purposes for a selection.

The author's main purpose in writing this poem is to

A entertain us.

B explain arithmetic.

C defend arithmetic teachers.

D convince us that arithmetic is useless.

IVB Distinguish between fact and opinion.

Which of the following is a statement of fact?

A If the girls continue to smoke, their children will smoke, too.

B Girls smoke more in Newton when both parents smoked.

C A greater percentage of parents smoked in Newton because of their jobs.

D In both cities, girls were more inclined to adopt their parents' smoking habits than were boys.

IVC Determine the author's viewpoint from a selection.

The author believes that Seoul

A is an attractive and interesting place.

B should only be visited once.

C should be rebuilt and made more inviting.

D is a simple city, lacking cultural appeal.

VA Identify the major uses of dictionaries, encyclopedias, atlases, newspapers, magazines, telephone books, thesauruses, almanacs, card catalogues, periodical guides, tables of contents, glossaries, indexes, maps, graphs, charts, tables, appendixes, footnotes and bibliographies.

To find a word that means the same as neutral, use the

A atlas.

B almanac.

C thesaurus.

D encyclopedia.

VB Locate information within reference materials using dictionaries, encyclopedias, atlases, newspapers, magazines, telephone books, thesauruses, almanacs, card catalogues, periodical guides, tables of contents, glossaries, indexes, maps, charts, graphs, tables, appendixes, footnotes, and bibliographies.

Which is another word that means part?

A complex

B alpha and omega

C contingent

D sum

VD Summarize a selection.

Which is the best summary of this passage?

A A bicycle has to fit its rider. The best way to see if a bicycle fits is to ride it. Don't buy a bicycle if it isn't the right size.

B Storing a bicycle can be a problem. Some bicycles have folding frames for easy storage. These bikes are usually lightweight and have several gears.

C A used bicycle is cheaper than a new one. A bicycle shop usually gives a used bike a guarantee of some sort. A new bicycle can cost up to $400.

D Before buying a bicycle you should consider where you will use it, how much to spend, what condition the bicycle is in, and whether it fits you.

**VIA Reading materials of her/his choice during free time, both in school and at home.

**VIB Going frequently to places where reading materials are available, such as libraries, reading rooms, book sales, and book exchanges.

**VIC Requesting reading materials in addition to those assigned by the teacher.

**VID Responding to the opportunity to talk about and/or discuss what he/she has read.

**VIA, B, C, and D are Positive Response to Reading Objectives.

Objective Code

46-5 Given a division exercise with a two-, three-, or four-digit dividend and a two-digit divisor, with or without remainders, the learner will determine the quotient.

$28\overline{)537}$

A 18 R23
B 19 R5
C 21 R9
D 181 R5

47-2 Given an appropriate verbal problem involving division of whole numbers, the learner will solve the problem.

If Jack paid $3,162 for a car, and his payments are $93 per month, how many months will it take him to pay for his car?

A 29
B 34
C 32
D 30

66-2 Given a common fraction whose decimal equivalent terminates in three (3) places or less, the learner will rename the common fraction as a decimal fraction.

$\frac{1}{5} = \square$

A .2
B 5
C .25
D .15

67-1 Given a set of decimal fractions of no more than three (3) decimal places, the learner will write the fractions in order from least to greatest and/or greatest to least.

Which set of decimal fractions is in order from least to greatest?

A 0.6 , 0.35 , 0.7 , 0.15
B 0.35 , 0.15 , 0.6 , 0.7
C 0.15 , 0.35 , 0.6 , 0.7
D 0.7 , 0.35 , 0.6 , 0.15

74-7 Given two numbers between 0 and 100 with up to two decimal places, the learner will find the product.

$21.52 \times 1.09 = \square$

A 23.4568
B 23.4158
C 234.158
D 234.568

75-3 Given an appropriate verbal problem, the learner will solve it.

How much would 21.6 liters of gas cost at $.20 per liter?

A $ 21.80
B $ 21.40
C $ 4.32
D $108.00

77-2 Given a decimal fraction, four digits or less, divided by a whole number, the learner will find the quotient. (No division carried to more than three, significant figures.)

$30\overline{)30.3}$

A 1.001
B 1.01
C 1.1
D 1

77-3 Given two decimal numbers (no more than four digits in the dividend and two in the divisor), the learner will find the quotient. (No division carried to more than three significant figures.)

Find the answer:

$0.04\overline{)14.04}$

A 0.351
B 3.51
C 35.1
D 351.

82-2 Given two fractional numbers with unlike denominators, the learner will tell which one is greater (denominators ≤ 12). The learner may use aids.

A $\frac{3}{4}$
B $\frac{1}{2}$

83-3 Given a mixed number with a denominator of 2, 3, 4, 5, 8, or 10, the learner will change it to its fractional form without aids.

$5\frac{1}{2} = \square$

A $\frac{5}{10}$
B $\frac{10}{2}$
C $\frac{11}{2}$
D $\frac{11}{5}$

87-3 Given two fractional numbers with unlike denominators (2, 4, or 8; 2, 3, or 6; or 2, 5, or 10), the learner will write the sum as a fraction.

$\frac{1}{2} + \frac{1}{6} = \square$

A $\frac{2}{8}$
B $\frac{1}{6}$
C $\frac{1}{3}$
D $\frac{1}{12}$

88-2 Given an appropriate verbal problem involving addition of fractional and/or mixed numbers, the learner will solve the problem.

Louis spent $1\frac{1}{2}$ hours studying his history and $2\frac{1}{4}$ hours studying his math. How many hours did he study in all?

A $1\frac{1}{4}$
B $3\frac{1}{4}$
C $4\frac{1}{4}$
D $3\frac{1}{6}$

92-4 Given two fractions with unlike denominators (2, 3, or 6; 2, 4, or 8; or 2, 5, or 10), the learner will subtract.

$\frac{1}{4}$
$-\frac{1}{2}$

A $\frac{1}{2}$
B $\frac{3}{4}$
C $\frac{1}{4}$
D $\frac{1}{8}$

92-6 Given two mixed numbers with unlike denominators (2, 3, or 6; 2, 4, or 8; or 2, 5, or 10), the learner will find the difference. Regrouping is necessary.

$3\frac{1}{3}$
$-1\frac{1}{2}$

A $1\frac{1}{6}$
B $4\frac{1}{3}$
C $2\frac{1}{3}$
D $2\frac{1}{2}$

97-2 Given two fractions with denominators less than or equal to ten, the learner will compute the product. The product of the denominators is less than or equal to fifty.

$\frac{1}{2} \times \frac{1}{5}$

A $\frac{1}{10}$
B $\frac{2}{10}$
C $\frac{1}{10}$
D 24

97-5 Given a whole number less than five and a mixed number less than five, with a denominator less than or equal to ten, the learner will compute the product.

Multiply and reduce:
$4\frac{1}{2} \times 4 = \square$

A $16\frac{1}{2}$
B $17\frac{1}{2}$
C $17\frac{1}{4}$
D $1\frac{1}{10}$

106-4 Given a partially completed table involving fractions with denominators of multiples of two and five, decimals and percents, the learner will complete the table. (Denominators of 2, 4, 8, 10, 20, 25, 50, 100.)

Choose the number which completes this table.

A 0.25
B 0.18
C 1.25
D 0.125

FRACTION	DECIMAL	PERCENT
$\frac{1}{4}$		12.5%

106-1 Given an appropriate verbal problem involving finding a percent of a number, the learner will solve the problem.

A family spends 30% of its income for food. The family's monthly income is $600. How much is spent for food each month?

A $180.00

B $200.00

C $300.00

D $420.00

124-2 Given an appropriate problem situation, the learner will select an appropriate unit, measure to the nearest whole unit, and find the area. (Formulas for nonrectangular shapes to be given.)

Area =

A 8 cm²

B 16 cm²

C 12 cm²

D 15 cm²

130-1 Given the volume formula for a rectangular solid and simple word problems with dimensions stated in metric units, the learner will solve the problems.

How much space is in a room 6 meters long, 10 meters wide, and 12 meters high?

A 28 m³

B 60 m³

C 72 m³

D 720 m³

146-1 Given angles of measures 45°, 90° and 180°, the learner will match the angle with the degree measures.

A 45°

B 90°

C 180°

D 360°

149-1 Given a period of time measurement in one unit, the learner will convert it to another unit as indicated below.
Only whole number problems.

seconds ____ minutes
minutes ____ hours
hours ____ days
days ____ weeks
days ____ years
weeks ____ years
months ____ years

72 hours = ___ days

A 2

B 3

C 4

D 6

154-2 Given $100 and purchases totaling less than $100, the learner will make change for the $100.

Steve bought a pair of jeans for $8.78, a jacket for $23.85 and a shirt for $6.75. What will be his change from $100.00?

A $60.72

B $60.62

C $40.28

D $39.38

167-2 Given a circle, the learner will identify and name the center, radius, diameter, circumference, and an arc.

What is the distance around the circle called?

A diameter

B circumference

C radius

D area

172-1 Given a situation in probability with all events equally likely, the learner will find the probability of a designated simple event.

Twelve cards are labeled from 1 through 12. If a card is chosen at random, what is the probability that the card labeled 9 will be chosen?

A $\frac{9}{12}$

B $\frac{1}{12}$

C $\frac{1}{9}$

D $\frac{1}{11}$

173-1 Given a set of up to 30 whole numbers, the learner will find the mean (the average).

Find the average: 10, 30, 75, 20, 85, 60, 40, 40

A 40

B 45

C 50

D 55

180-7 Given a common algebraic expression and all necessary values, the learner will evaluate the expression.

Evaluate $V = \frac{Bh}{3}$ when $B = 24$ and $h = 3$

A V = 216

B V = 72

C V = 27

D V = 24

182-5 Given a coordinate system using whole numbers and/or letters, and given pairs of coordinates, the learner will locate the points.

Where is Grand Rapids located?

A G-5

B G-6

C H-5

D H-6

47-1 Given an appropriate problem involving division, the learner will estimate the solution.

If Ms. Jones used 38 liters of gas to drive 613 kilometers, about how many kilometers did she drive per liter of gasoline?

A 2

B 10

C 15

D 20

65-1 Given a numeral with no more than three decimal places, the learner will round to the nearest whole number, tenth or hundredth as requested.

Round 72.588 to the nearest tenth.

A 70

B 72.5

C 72.6

D 72.8

73-2 Given two decimal fractions between 1 and 100 with no more than two decimal places, the learner will estimate the product.

Which is the best estimate?

41.62 × 30.7 = □

A 700

B 1,000

C 1,200

D 1,500

74-1 Given a decimal fraction of three places or less, the learner will multiply by 10, 100, 1000 upon request.

.7 × 1000 = □

A 7,000

B 700

C 70

D .7000

104-2 Given an appropriate verbal problem, the learner will write a proportion and solve the problem.

At a pancake-eating contest, Edward ate 7 pancakes in 4 minutes. How many could he eat in 12 minutes?

A 21

B 23

C 28

D 48

104-3 Given a scale drawing and a scale expressed in metric units, the learner will determine the lengths of a given part of the actual object.

The distance between Sault Ste. Marie and Escanaba is about:

A 4.0 km

B 200 km

C 400 km

D 540 km

124-1 Given an appropriate word problem stated in metric units involving areas of rectangles (square included), triangles or circles, and the formulas for the triangle and circle (also the value of π), the learner will solve the problem.

This triangle has a base of 7 units and a height of 16 units. What is its area? ($A = \frac{1}{2}$ bh)

A 112 sq. units

B 56 sq. units

C 16 sq. units

D $7\frac{1}{2}$ sq. units

APPENDIX C

LIST OF ITEMS MEASURING EACH FOURTH GRADE OBJECTIVE

READING

Obj. Code	Skill Area & Objective Description	Test Item Numbers
	VOCABULARY MEANING	
IA	PREFIXES	1-3
IB	SUFFIXES	20-22
IC	MULTIPLE MEANINGS	52-54
ID	SYNONYMS	4-6
IE	ANTONYMS	37-39
IF	CONTEXT	66-68
	LITERAL COMPREHENSION	
IIB	MAIN IDEA	7,26,48
IIC	MAIN IDEA DETAILS	14,42,63
IIE	SEQUENCE	18,30,46
IIF	CAUSE/EFFECT	10,32,58
IIG	LIKENESS/DIFFERENCE	9,28,50
	INFERENTIAL COMPREHENSION	
IIIA	MAIN IDEA	13, 41, 62
IIIB	CAUSE/EFFECT	17, 29, 45
IIIC	PROBABLE OUTCOME	40, 73, 75
IIID	MAIN IDEA DETAILS	8, 27, 49
IIIE	SEQUENCE	11, 33, 59
IIIF	LIKENESS/DIFFERENCE	15, 43, 64
IIIG	CONCLUSIONS	12, 34, 60
IIIH	ANALOGIES	69-71
IIII	CHARACTERS	16, 44, 65
	CRITICAL READING SKILLS	
IVA	AUTHOR'S PURPOSE	61, 72, 74
	RELATED STUDY SKILLS	
VA	REFERENCES, AWARENESS	23-25
VB	REFERENCES, USE	35, 36, 51
VD	SUMMARIZING	19, 31, 47
VF	ALPHABETIZING	55-57
	POSITIVE RESPONSE/READING	
VIA	READ IN FREE TIME	76-78
VIB	VISIT READING PLACES	79-81
VIC	REQUEST EXTRA READING	82-84
VID	TALK ABOUT READING	85-87
	RELATED ACTIVITIES	88-90

MATHEMATICS

CORE

Obj. Code	Skill Area & Objective Description	Test Item Numbers
	NUMERATION	
10-5	ORDER SETS: FEWER	133-135
10-7	ORDER SETS: FEWEST	169-171
16-2	PLACE VALUE: HUNDRED CHART	97-99
16-4	EXPAND 2-DIGIT NUMERAL	151-153
16-7	EXPAND 3-DIGIT NUMERAL W/WORDS	121-123
16-8	EXPAND 3-DIGIT NUMERAL	163-165
16-9	ABC > CBA OR ABC < CBA	112-114
16-10	ORDER SET OF NUMERALS	109-111
17-1	NEXT NUMBER IN SEQUENCE	124-126
	WHOLE NUMBERS	
23-1	AB + C, NO REGROUPING	154-156
23-3	AB + CD, NO REGROUPING	115-117
24-1	AB + C, WITH REGROUPING	118-120
24-2	AB + CD, WITH REGROUPING	160-162
29-2	SUBTRACTION: NUMBER SENTENCE	100-102
30-1	AB − C, NO REGROUPING	166-168
30-2	AB − CD, NO REGROUPING	148-150
31-1	AB − C, WITH REGROUPING	145-147
35-3	A + A + A . . . = A × B	130-132
35-6	A × B = A + A + A . . .	157-159
36-1	A × 1 = ?	139-141
36-3	A × B; A,B < 6	142-144
	FRACTIONS	
79-4/6	IDENTIFY CONGRUENT PARTS	136-138
79-13	SHADED REGIONS: 1/2, 1/3, 1/4	106-108
	METRIC MEASUREMENT	
107-6	LENGTH: NEAREST CM	91-93
143-2	TEMPERATURE	103-105
	NON-METRIC MEASUREMENT	
147-6	TIME: NEAREST HOUR	94-96
	GEOMETRY	
158-1	SHAPES	127-129
163-1	PROPERTIES OF FIGURES	172-174

CORRELATE

Obj. Code	Test Form, Skill Area & Obj. Description	Test Item Numbers
17-3	NUMERATION: ODD OR EVEN	175-177
28-3	WHOLE NUMBERS: SUBTRACTION	190-192
29-4	WHOLE NUMBERS: A − B; A,B < 19	181-183
31-2	WHOLE NUMBERS: AB − CD	178-180
35-4	WHOLE NUMBERS: 2 × A = ?	187-189
36-2	WHOLE NUMBERS: A × 0 = ?	193-195
158-3	GEOMETRY: SHAPES	184-186

LIST OF ITEMS MEASURING EACH SEVENTH GRADE OBJECTIVE

READING

Obj. Code	Skill Area & Objective Description	Test Item Numbers
	VOCABULARY MEANING	
IA	PREFIXES	4-6
IC	MULTIPLE MEANINGS	7-9
ID	SYNONYMS	28-30
IE	ANTONYMS	57-59
IF	CONTEXT	10-12
	LITERAL COMPREHENSION	
IIB	MAIN IDEA	15, 45, 60
IIC	MAIN IDEA DETAILS	21, 22, 33
IIE	SEQUENCE	35, 43, 71
IIF	CAUSE/EFFECT	38, 48, 67
IIG	LIKENESS/DIFFERENCE	17, 47, 62
	INFERENTIAL COMPREHENSION	
IIIA	MAIN IDEA	18, 63, 64
IIIB	CAUSE/EFFECT	34, 42, 70
IIIC	PROBABLE OUTCOME	31, 32, 37
IIID	MAIN IDEA DETAILS	16, 46, 61
IIIE	SEQUENCE	39, 49, 68
IIIG	CONCLUSIONS	40, 50, 69
IIIH	ANALOGIES	23-25
	CRITICAL READING SKILLS	
IVA	AUTHOR'S PURPOSE	13, 19, 65
IVC	AUTHOR'S VIEWPOINT	14, 20, 66
	RELATED STUDY SKILLS	
VA	REFERENCES, AWARENESS	51-53
VB	REFERENCES, USE	26, 27, 41
VD	SUMMARIZING	36, 44, 72
VF	ALPHABETIZING	54-56
	POSITIVE RESPONSE/READING	
VIA	READ IN FREE TIME	73-75
VIB	VISIT READING PLACES	76-78
VIC	REQUEST EXTRA READING	79-81
VID	TALK ABOUT READING	82-84
	RELATED ACTIVITIES	85-87

MATHEMATICS

CORE

Obj. Code	Skill Area & Objective Description	Test Item Numbers
	NUMERATION	
18-1	PLACE VALUE: FOUR DIGITS	88-90
19-2	WRITE FOUR-DIGIT NUMERAL	1-3
	WHOLE NUMBERS	
25-3	A + B + C: ADDEND < 7 DIGITS	91-93
26-3	ESTIMATE SUM: 3-DIGIT ADDENDS	118-120
32-1	ABC − DE (NO 0'S), REGROUPING	163-165
32-2	ABC − DE OR ABC − DEF	154-156
39-1	AB × C = ?	124-126
39-3	AB × CD = ?	145-147
44-7	DIVISION: COMPUTATION	94-96
45-1	DIVISION: WORD PROBLEM	148-150
	DECIMALS	
63-2	PLACE VALUE	139-141
66-5	+ OR − : COMPUTATION	130-132
69-1	+ AND − : WORD PROBLEM	160-162
	FRACTIONS	
80-2	SHADED REGIONS, 10 OR LESS	97-99
81-3	EQUIVALENCE	121-123
85-3	ADD MIXED NOS., LIKE DENOMS.	100-102
90-3	WHOLE NUMBER MINUS FRACTION	103-105
94-2	WHOLE NUMBER TIMES FRACTION	127-129
95-3	A/B × C/D; B,D < 10	109-111
	METRIC MEASUREMENT	
109-2/3	CONVERSION: METERS, CENTIMETERS	133-135
119-2	AREA: COUNT SQUARE UNITS	136-138
127-1	VOLUME: COUNT CUBIC UNITS	157-159
144-1	TEMPERATURE	106-108
	NON-METRIC MEASUREMENT	
148-3	TIME: NEAREST FIVE MINUTES	151-153
152-2	MONEY: ADD OR SUBTRACT	142-144
	GEOMETRY	
157-1	QUADRILATERALS	112-114
160-1/2	LINES: RELATIONSHIPS	166-168
	PROBABILITY & STATISTICS	
170-2	BAR GRAPH	115-117

CORRELATE

Obj. Code	Test Form, Skill Area & Obj. Description	Test Item Numbers
18-2	NUMERATION: EXPAND ABCD	172-174
40-3	WHOLE NUMBERS: ESTIMATE PRODUCTS	178-180
43-2	WHOLE NUMBERS: RELATE × TO +	175-177
63-1	DECIMALS: PLACE VALUE	184-186
64-3	DECIMALS: MEANING, 100THS	187-189
90-3	FRACTIONS: SUBTRACTION	181-183
109-4	METRIC MEASUREMENT: CM TO M	169-171

LIST OF ITEMS MEASURING EACH TENTH GRADE OBJECTIVE

READING

Obj. Code	Skill Area & Objective Description	Test Item Numbers
	VOCABULARY MEANING	
IA	PREFIXES	31-33
IC	MULTIPLE MEANINGS	37-39
ID	SYNONYMS	34-36
IE	ANTONYMS	1-3
IF	CONTEXT	4-6
	LITERAL COMPREHENSION	
IIB	MAIN IDEA	15, 40, 55
IIC	MAIN IDEA DETAILS	13, 47, 67
IIE	SEQUENCE	19, 29, 50
IIF	CAUSE/EFFECT	43, 58, 63
IIG	LIKENESS/DIFFERENCE	17, 42, 57
	INFERENTIAL COMPREHENSION	
IIIA	MAIN IDEA	12, 46, 66
IIIB	CAUSE/EFFECT	18, 28, 49
IIIC	PROBABLE OUTCOME	23, 24, 27
IIID	MAIN IDEA DETAILS	16, 41, 56
IIIE	SEQUENCE	44, 59, 61
IIIF	LIKENESS/DIFFERENCE	14, 48, 68
IIIG	CONCLUSIONS	45, 60, 62
IIIH	ANALOGIES	7-9
	CRITICAL READING SKILLS	
IVA	AUTHOR'S PURPOSE	10, 25, 64
IVB	FACT/OPINION	52-54
IVC	AUTHOR'S VIEWPOINT	11, 26, 65
	RELATED STUDY SKILLS	
VA	REFERENCES, AWARENESS	70-72
VB	REFERENCES, USE	21, 22, 69
VD	SUMMARIZING	20, 30, 51
	POSITIVE RESPONSE/READING	
VIA	READ IN FREE TIME	73-75
VIB	VISIT READING PLACES	76-78
VIC	REQUEST EXTRA READING	79-81
VID	TALK ABOUT READING	82-84
	RELATED ACTIVITIES	85-87

MATHEMATICS

CORE

Obj. Code	Skill Area & Objective Description	Test Item Numbers
	WHOLE NUMBERS	
46-5	DIVISION: COMPUTATION	109-111
47-2	DIVISION: WORD PROBLEMS	112-114
	DECIMALS	
66-2	CONVERT FRACTIONS TO DECIMALS	94-96
67-1	ORDER SET OF DECIMALS	166-168
74-7	DECIMAL × DECIMAL	118-120
75-3	MULTIPLICATION: WORD PROBLEMS	130-132
77-2	DECIMAL ÷ WHOLE NUMBER	142-144
77-3	DECIMAL ÷ DECIMAL	121-123
	FRACTIONS	
82-2	FIND LARGER: A/B OR C/D	115-117
83-3	CONVERT MIXED TO COMMON	154-156
87-3	A/B ÷ C/D, B ≠ D	145-147
88-2	ADDITION: WORD PROBLEMS	163-165
92-4	A/B − C/D, B ≠ D	106-108
92-6	SUBTRACTION: MIXED NUMBERS	133-135
97-2	A/B × C/D; B,D ≠ 0	127-129
97-5	WHOLE NUMBER × MIXED NUMBER	151-153
	RATIO, PROPORTION & PERCENT	
105-4	CONVERT FRACTION, DECIMAL, %	88-90
106-1	PERCENT: WORD PROBLEMS	148-150
	METRIC MEASUREMENT	
124-2	MEASURE AND COMPUTE AREA	169-171
130-1	VOLUME: WORD PROBLEMS	97-99
	NON-METRIC MEASUREMENT	
146-1	ANGLE MEASUREMENT	160-162
149-1	TIME CONVERSION	103-105
154-2	MONEY: WORD PROBLEMS	157-159
	GEOMETRY	
167-2	PARTS OF A CIRCLE	100-102
	PROBABILITY & STATISTICS	
172-1	PROBABILITY OF SIMPLE EVENT	139-141
173-1	MEAN OF A SET OF NUMBERS	124-126
	EQUATIONS, EXPRESSIONS, GRAPHS	
180-7	EVALUATE COMMON ALGEBRAIC EXPR.	136-138
182-5	READ COORDINATE SYSTEM	91-93

CORRELATE

Obj. Code	Test Form, Skill Area & Obj. Description	Test Item Numbers
47-1	WHOLE NUMBER: DIVISION ESTIMATE	172-174
65-1	DECIMALS: ROUNDING	178-180
73-2	DECIMALS: ESTIMATE PRODUCT	190-192
74-1	DECIMAL × 10, 100, 1000	187-189
104-2	PROPORTION: WORD PROBLEM	175-177
104-3	PROPORTION: SCALE DRAWING	181-183
124-1	METRIC MEASUREMENT: AREA	184-186

APPENDIX D

VARIABLES THAT MAKE A DIFFERENCE*

Over the past decade much research has been focused on identifying the characteristics of schools, teachers, administrators and students which lead to success in school. While some of this research has identified factors outside the school as being important, there is an increasing amount of research which shows variables which educators can influence through their behavior. This section briefly discusses a series of principles which have been identified through research by the Michigan Department of Education or other researchers. These principles, or "variables that make a difference" have been shown through careful study to be highly related to student achievement. The principles can be influenced by educators and should be used to improve the schooling process.

• The more time spent on instruction the greater the achievement gain.

In general the more time spent in school and the more time spent in instruction the greater the learning that takes place. Implications of this principle extend to improved use of time, individualized instruction and curriculum content.

• The greater the amount of parental involvement, the greater the achievement.

Parents influence their children in a number of ways; through their expectations for the children, through their own attitudes toward learning, through involvement at school, and through direct instruction.

• High expectations on the part of the principal are associated with greater achievement.

Principals who are assertive instructional leaders and have high expectations for students tend to have successful schools. They work with staff to set goals and to provide the support needed to attain them. They evaluate instruction based on the agreed upon goals.

• High teacher expectations are associated with high achievement.

Teachers who believe that all of their students have the ability to succeed also believe that they, as teachers, make a difference. These factors seem to have a positive effect on student learning.

• Higher achievement gains are more likely to occur in classrooms characterized by a high degree of structure, with teachers who are supportive.

Structure is manifested in a number of ways. Among these are goal direction, classroom organization, and supervision. This does not imply that autocratic teachers are the most successful. A warm supportive teacher who is able to provide a clear direction toward the achievement of clearly stated goals and objectives and supervise or monitor student behavior is likely to note achievement gains among the students in the class.

*Acknowledgements: The principles contained in this section are drawn from the work of many educational researchers. The section is based on a literature review conducted for the Michigan Department of Education by the ESEA I Evaluation Technical Assistance Center, Educational Testing Services, Evanston, Illinois.

- **The use of positive feedback reinforcement by teachers is associated with greater achievement.**

Teachers who are successful in raising the achievement levels of students tend to use a higher rate of praise and encouragement and to use them more appropriately than teachers who are less successful.

- **The use of tutoring is related to achievement.**

Research has shown that tutoring can be an effective way to bring about better achievement. This may be related to the first principle in this section, that is, the amount and quality of time spent on instruction.

- **Recitation promotes greater achievement gains.**

Recitation (generally defined as response by a student) can be an effective means of promoting both the acquisition and retention of knowledge.

This section has presented in summary form eight principles associated with improved student achievement. Many of the principles may seem obvious and based on common sense. However, what may appear obvious is not always supported by research. Many of the principles are related to one another and they may lead to achievement increments if employed in combination.

Teachers, principals, superintendents and all others involved in the education of Michigan's Children and Youth are encouraged to study these principles to see how they apply in their schools. Where ever appropriate, educators and parents are encouraged to implement strategies and programs based, at least in part, on these principles.

For more information regarding these "variables that make a difference" contact David L. Donovan, Assistant Superintendent, Technical Assistance and Evaluation: P.O. Box 30008, Lansing, Michigan 48909.

APPENDIX E

UNDERSTANDING AND USING THE INDIVIDUAL STUDENT REPORT
Michigan Educational Assessment Program

What is the Michigan Educational Assessment Program (MEAP)?

MEAP is a statewide testing program. It checks to see if you know some important skills in reading and mathematics. All fourth, seventh, and tenth grade students take the assessment tests. The MEAP test results are used by teachers, counselors, administrators, and the public to determine how well the school or district is doing to teach students important basic skills.

The skills you are expected to know are called **Performance Objectives**. There are separate performance objectives for reading and mathematics. Objectives that are alike are put into groups called **Skill Areas**.

Every objective is measured by three test questions. You must answer two or three of the questions correctly to pass an objective. And, if you pass more than 75% of the objectives, you are considered to be doing acceptably well.

What does my Individual Student Report tell me?

- It compares what you should know with what you do know.
- It tells which objectives you have learned and which you have not learned.
- It tells if you are at an acceptable level in reading and mathematics.

How can I use the MEAP results?

- Write down the objectives which you did not pass.
- Talk with your teachers, parents, and counselor about your problems with these objectives.
- Ask your teachers, parents, and counselor for help to learn these objectives.
- Ask for books or worksheets which will help you.
- Decide how you will work to learn the objectives you need to know.
- Work on the objectives by yourself or maybe you can take a special course that will help you.

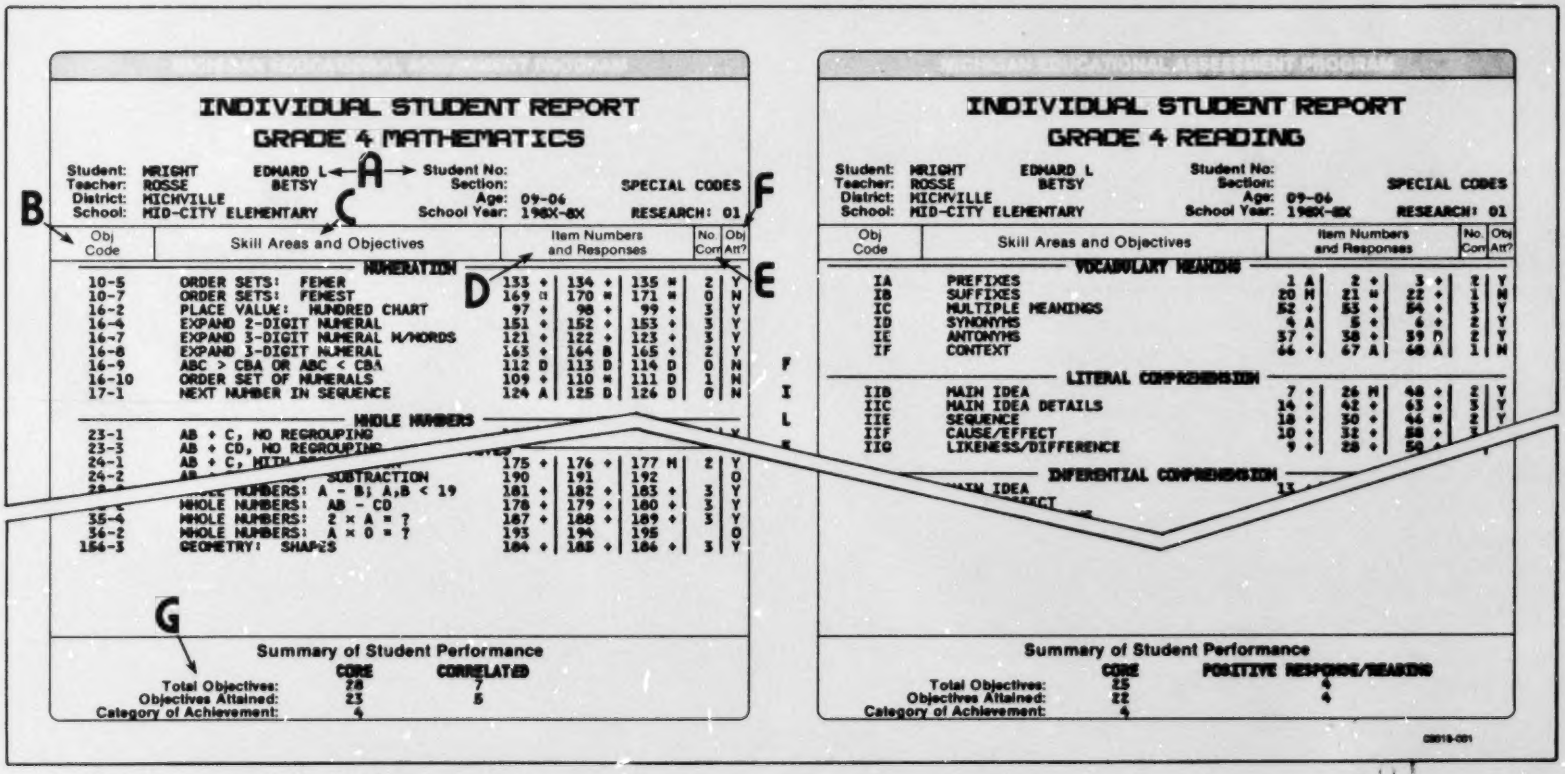
How do I read the report?

The example given here shows how to read your report. Large capital letters are used to help you find the important parts (sections). If you have any questions about your report, ask your teacher or counselor for help.

- Section A gives identification information: your name, student number, teacher, class section, district, school, and age.
- Sections B & C give the number and a brief description of each of the mathematics objectives tested.

- Section **D** gives the question numbers and tells what you did.
  - + means you answered correctly.
  - A, B, C, or D shows that you gave a wrong answer and tells which answer you did give.
  - * means you skipped the question.
  - A blank space means you stopped answering questions before you got to this question.
- Section **E** shows that number of questions you answered correctly for each objective.
- Section **F** tells if you passed each objective: "Y" means yes, "N" means no, and "O" means you didn't answer enough questions to tell.
- Section **G** tells the total number of objectives you passed and also gives a summary of your test results. Test results are reported at four levels called **Categories of Achievement.** Category 4 is the highest and means your test results are acceptable. In order to be in Category 4 for reading and mathematics, you must pass more than 75% of the objectives. Anything below Category 4 means you need some help. If you want to know more about the categories of achievement, please ask your teacher or counselor.

The information given in Section **A-G** for the mathematics objectives is then repeated for the reading objectives.


A
B
C
D
E
F
G
INDIVIDUAL STUDENT REPORT
GRADE 4 MATHEMATICS
Student: WRIGHT EDWARD L
Teacher: ROSSE BETSY
District: MICHVILLE
School: MID-CITY ELEMENTARY
Student No:
Section:
Age: 09-06
School Year: 198X-8X
SPECIAL CODES
RESEARCH: 01
Obj Code
Skill Areas and Objectives
Item Numbers and Responses
No. Corr
Obj Att?
NUMERATION
10-5 ORDER SETS: FEWER 133 + 134 + 135 M 2 Y
10-7 ORDER SETS: FEWEST 169 C 170 M 171 M 0 N
16-2 PLACE VALUE: HUNDRED CHART 97 + 98 + 99 + 3 Y
16-4 EXPAND 2-DIGIT NUMERAL 151 + 152 + 153 + 3 Y
16-7 EXPAND 3-DIGIT NUMERAL W/WORDS 121 + 122 + 123 + 3 Y
16-8 EXPAND 3-DIGIT NUMERAL 163 + 164 B 165 + 2 Y
16-9 ABC > CBA OR ABC < CBA 112 D 113 D 114 D 0 N
16-10 ORDER SET OF NUMERALS 109 + 110 M 111 D 1 N
17-1 NEXT NUMBER IN SEQUENCE 124 A 125 D 126 D 0 N
WHOLE NUMBERS
23-1 AB + C, NO REGROUPING
23-3 AB + CD, NO REGROUPING
24-1 AB + C, WITH
24-2 AB
SUBTRACTION
175 + 176 + 177 M 2 Y
190 191 192 O
WHOLE NUMBERS: A - B; A,B < 19 181 + 182 + 183 + 3 Y
WHOLE NUMBERS: AB - CD 178 + 179 + 180 + 3 Y
35-4 WHOLE NUMBERS: 2 × A = ? 187 + 188 + 189 + 3 Y
36-2 WHOLE NUMBERS: A × 0 = ? 193 194 195 O
164-3 GEOMETRY: SHAPES 184 + 185 + 186 + 3 Y
Summary of Student Performance
CORE
CORRELATED
Total Objectives: 28 7
Objectives Attained: 23 5
Category of Achievement: 4
INDIVIDUAL STUDENT REPORT
GRADE 4 READING
Student: WRIGHT EDWARD L
Teacher: ROSSE BETSY
District: MICHVILLE
School: MID-CITY ELEMENTARY
Student No:
Section:
Age: 09-06
School Year: 198X-8X
SPECIAL CODES
RESEARCH: 01
Obj Code
Skill Areas and Objectives
Item Numbers and Responses
No. Corr
Obj Att?
VOCABULARY MEANING
IA PREFIXES 1 A 2 + 3 + 2 Y
IB SUFFIXES 20 M 21 M 22 + 1 N
IC MULTIPLE MEANINGS 52 + 53 + 54 + 3 Y
ID SYNONYMS 4 A 5 + 6 + 2 Y
IE ANTONYMS 37 + 38 + 39 D 2 Y
IF CONTEXT 66 + 67 A 68 A 1 N
LITERAL COMPREHENSION
IIB MAIN IDEA 7 + 26 M 48 + 2 Y
IIC MAIN IDEA DETAILS 14 + 42 + 63 + 3 Y
IIE SEQUENCE 18 + 30 + 44 M 2 Y
IIF CAUSE/EFFECT 10 + 32 + 88 + 3 Y
IIG LIKENESS/DIFFERENCE 9 + 28 + 50 + 3 Y
INFERENTIAL COMPREHENSION
MAIN IDEA 13
EFFECT
Summary of Student Performance
CORE
POSITIVE RESPONSE/READING
Total Objectives: 25 4
Objectives Attained: 22 4
Category of Achievement: 4
03018-001

APPENDIX F
SPECIAL NOTES FOR ADULT EDUCATORS

Introduction

In June 1982 the Michigan Department of Education conducted a survey of local Adult Education (AE) programs to determine interest in piloting the Michigan Educational Assessment Program (MEAP) tests with AE students. Approximately one-fourth of the AE programs in the state volunteered to participate. The purpose of this pilot project was to determine if the MEAP tests, and training following the testing would be useful to adult educators.

The 1982 pilot project was a success and the MEAP tests were again offered in 1983 to state AE programs on a voluntary basis. The tests were administered during three week spans in October, 1983 and February, 1984.

In the 1982 pilot testing, the seventh grade level test was used to test adult education students on fourth through eighth grade skills in mathematics and/or reading. To broaden the scope of skills tested, three levels of MEAP tests were offered in 1983. Level I contained the Fourth Grade Mathematics Test only. Level II contained the Seventh Grade Mathematics Test, and a modified version of the Seventh Grade Reading Test. The modified reading test measured the same objectives as the basic seventh grade test, however, some reading passages were changed to appeal to more mature students. Level III contained the same modified reading test as Level II, and the Tenth Grade Mathematics Test.

This handbook contains the interpretive materials prepared by MEAP staff to help local educators read and use their MEAP test results. The narrative refers to fourth, seventh, and tenth grade results of students because it was produced specifically for K-12 educators who receive fourth, seventh, and tenth grade results. However, most of the information is also appropriate for your use with the adult education test results and students because the AE mathematics tests are **exactly** the same as the tests taken by fourth, seventh, and tenth graders. The reading AE test measures most of the same objectives tested at the seventh grade with modified reading passages. The test results can be used to help adult educators (1) determine individual student needs; and (2) review curricula to help improve the delivery of instruction.

Special Notes

The following highlights the specific sections of the handbook which you should read. If you have questions, or would like further explanations, call a MEAP staff member at (517) 373-8393.

Section I (pages 1-3) Most information is applicable to the Adult Education assessment project.

Section II (pages 4-11) Most information in this section is applicable, with appropriate adjustments for Adult Education students.

Section III (pages 12-15) This information is applicable for all MEAP tests.

Appendix A (pages 16-27) Adult educators participating in the use of the MEAP tests will receive the following reports:

Individual Student Report *(page 16)*
School Summary Report *(page 18)*
District Summary Report *(page 18)*
Test Item Analysis - School, District *(page 24)*

Appendix B - Information from *Appendix B* which is applicable to the Adult Education assessment project is given on pages 30-32, 33-37, and 40-42.

Appendix C is not used for Adult Education. A List of Items Measuring Each Adult Education Objective is provided in this appendix *(F)*.

Appendices D, E, and G - All information in these *appendices* is applicable to the Adult Education assessment project.

This handbook also describes reports which are **NOT** part of the Adult Education assessment project: Classroom Listing Report, Parent Pamphlet, Feeder School Report, Research Code Report.

LIST OF ITEMS MEASURING EACH ADULT EDUCATION OBJECTIVE

LEVEL I - MATHEMATICS

Obj. Code	Skill Area & Objective Description	Test Item Numbers
	NUMERATION	
10-5	ORDER SETS: FEWER	43-45
10-7	ORDER SETS: FEWEST	79-81
16-2	PLACE VALUE: HUNDRED CHART	7-9
16-4	EXPAND 2-DIGIT NUMERAL	61-63
16-7	EXPAND 3-DIGIT NUMERAL W/WORDS	31-33
16-8	EXPAND 3-DIGIT NUMERAL	73-75
16-9	ABC > CBA OR ABC < CBA	22-24
16-10	ORDER SET OF NUMERALS	19-21
17-1	NEXT NUMBER IN SEQUENCE	34-36
	WHOLE NUMBERS	
23-1	AB + C, NO REGROUPING	64-66
23-3	AB + CD, NO REGROUPING	25-27
24-1	AB + C, WITH REGROUPING	28-30
24-2	AB + CD, WITH REGROUPING	70-72
29-2	SUBTRACTION: NUMBER SENTENCE	10-12
30-1	AB − C, NO REGROUPING	76-78
30-2	AB − CD, NO REGROUPING	58-60
31-1	AB − C, WITH REGROUPING	55-57
35-3	A + A + A . . . = A × B	40-42
35-6	A × B = A + A + A . . .	67-69
36-1	A × 1 = ?	49-51
36-3	A × B; A,B < 6	52-54
	FRACTIONS	
79-4/6	IDENTIFY CONGRUENT PARTS	46-48
79-13	SHADED REGIONS: 1/2, 1/3, 1/4	16-18
	METRIC MEASUREMENT	
107-8	LENGTH: NEAREST CM	1-3
143-2	TEMPERATURE	13-15
	NON-METRIC MEASUREMENT	
147-6	TIME: NEAREST HOUR	4-6
	GEOMETRY	
156-1	SHAPES	37-39
163-1	PROPERTIES OF FIGURES	82-84
	CORRELATE	
17-3	NUMERATION: ODD OR EVEN	85-87
28-3	WHOLE NUMBERS: SUBTRACTION	100-102
29-4	WHOLE NUMBERS: A − B; A,B < 19	91-93
31-2	WHOLE NUMBERS: AB − CD	88-90
35-4	WHOLE NUMBERS: 2 × A = ?	97-99
36-2	WHOLE NUMBERS: A × 0 = ?	103-105
156-3	GEOMETRY: SHAPES	94-96

LIST OF ITEMS MEASURING EACH ADULT EDUCATION OBJECTIVE

LEVELS II & III - READING

Obj. Code	Skill Area & Objective Description	Test Item Numbers
	VOCABULARY MEANING	
IA	PREFIXES	1-3
IC	MULTIPLE MEANINGS	4-6
ID	SYNONYMS	20-22
IE	ANTONYMS	40-42
	LITERAL COMPREHENSION	
IIB	MAIN IDEA	9, 31, 43
IIC	MAIN IDEA DETAILS	12, 47, 50
IIE	SEQUENCE	18, 30, 65
IIF	CAUSE/EFFECT	25, 34, 61
IIG	LIKENESS/DIFFERENCE	11, 33, 45
	INFERENTIAL COMPREHENSION	
IIIA	MAIN IDEA	14, 46, 49
IIIB	CAUSE/EFFECT	17, 28, 64
IIIC	PROBABLE OUTCOME	23, 24, 55
IIID	MAIN IDEA DETAILS	10, 32, 44
IIIE	SEQUENCE	26, 35, 62
IIIF	LIKENESS/DIFFERENCE	13, 48, 51
IIIG	CONCLUSIONS	27, 36, 63
	CRITICAL READING SKILLS	
IVA	AUTHOR'S PURPOSE	7, 15, 59
IVC	AUTHOR'S VIEWPOINT	8, 16, 60
	RELATED STUDY SKILLS	
VA	REFERENCES, AWARENESS	37-39
VB	REFERENCES, USE	52-54
VD	SUMMARIZING	19, 29, 66
VF	ALPHABETIZING	56-58
	POSITIVE RESPONSE/READING	
VIA	READ IN FREE TIME	67-69
VIB	VISIT READING PLACES	70-72
VIC	REQUEST EXTRA READING	73-75
VID	TALK ABOUT READING	76-78
	RELATED ACTIVITIES	79-81

LEVEL II - MATHEMATICS

Obj. Code	Skill Area & Objective Description	Test Item Numbers
	NUMERATION	
18-1	PLACE VALUE: FOUR DIGITS	82-84
	WHOLE NUMBERS	
25-3	A + B + C: ADDEND < 7 DIGITS	85-87
26-3	ESTIMATE SUM: 3-DIGIT ADDENDS	112-114
32-1	ABC − DE (NO 0'S), REGROUPING	157-159
32-2	ABC − DE OR ABC − DEF	149-150
38-1	AB × C = ?	118-120
39-3	AB × CD = ?	139-141
44-7	DIVISION: COMPUTATION	88-90
45-1	DIVISION: WORD PROBLEM	142-144
	DECIMALS	
63-2	PLACE VALUE	133-135
68-5	+ OR − : COMPUTATION	124-126
69-1	+ AND − : WORD PROBLEM	154-156
	FRACTIONS	
80-2	SHADED REGIONS, 10 OR LESS	91-93
81-3	EQUIVALENCE	115-117
85-3	ADD MIXED NOS., LIKE DENOMS.	94-96
90-3	WHOLE NUMBER MINUS FRACTION	97-99
94-2	WHOLE NUMBER TIMES FRACTION	121-123
95-3	A/B × C/D; B,D < 10	103-105
	METRIC MEASUREMENT	
109-2/3	CONVERSION: METERS, CENTIMETERS	127-129
119-2	AREA: COUNT SQUARE UNITS	130-132
127-1	VOLUME: COUNT CUBIC UNITS	151-153
144-1	TEMPERATURE	100-102
	NON-METRIC MEASUREMENT	
148-3	TIME: NEAREST FIVE MINUTES	145-147
152-2	MONEY: ADD OR SUBTRACT	136-138
	GEOMETRY	
157-1	QUADRILATERALS	106-108
160-1/2	LINES: RELATIONSHIPS	160-162
	PROBABILITY & STATISTICS	
170-2	BAR GRAPH	109-111
	CORRELATE	
18-2	NUMERATION: EXPAND ABCD	166-168
40-3	WHOLE NUMBERS: ESTIMATE PRODUCTS	172-174
43-2	WHOLE NUMBERS: RELATE × TO +	169-171
63-1	DECIMALS: PLACE VALUE	178-180
64-3	DECIMALS: MEANING, 100THS	181-183
90-3	FRACTIONS: SUBTRACTION	175-177
109-4	METRIC MEASUREMENT: CM TO M	163-165

LEVEL III - MATHEMATICS

Obj. Code	Skill Area & Objective Description	Test Item Numbers
	WHOLE NUMBERS	
46-5	DIVISION: COMPUTATION	103-105
47-2	DIVISION: WORD PROBLEMS	106-107
	DECIMALS	
66-2	CONVERT FRACTIONS TO DECIMALS	88-90
67-1	ORDER SET OF DECIMALS	160-162
74-7	DECIMAL × DECIMAL	112-114
75-3	MULTIPLICATION: WORD PROBLEMS	124-126
77-2	DECIMAL ÷ WHOLE NUMBER	136-138
77-3	DECIMAL ÷ DECIMAL	115-117
	FRACTIONS	
82-2	FIND LARGER: A/B OR C/D	109-111
83-3	CONVERT MIXED TO COMMON	148-150
87-3	A/B + C/D, B ≠ D	139-141
88-2	ADDITION: WORD PROBLEMS	157-159
92-4	A/B − C/D, B ≠ D	100-102
92-6	SUBTRACTION: MIXED NUMBERS	127-129
97-2	A/B × C/D; B,D < 10	121-123
97-5	WHOLE NUMBER × MIXED NUMBER	145-147
	RATIO, PROPORTION & PERCENT	
105-4	CONVERT FRACTION, DECIMAL, %	82-84
106-1	PERCENT: WORD PROBLEMS	142-144
	METRIC MEASUREMENT	
124-2	MEASURE AND COMPUTE AREA	163-165
130-1	VOLUME: WORD PROBLEMS	91-93
	NON-METRIC MEASUREMENT	
146-1	ANGLE MEASUREMENT	154-156
149-1	TIME CONVERSION	97-99
154-2	MONEY: WORD PROBLEMS	151-153
	GEOMETRY	
167-2	PARTS OF A CIRCLE	94-96
	PROBABILITY & STATISTICS	
172-1	PROBABILITY OF SIMPLE EVENT	133-135
173-1	MEAN OF A SET OF NUMBERS	118-120
	EQUATIONS, EXPRESSIONS, GRAPHS	
180-7	EVALUATE COMMON ALGEBRAIC EXPR.	130-132
182-5	READ COORDINATE SYSTEM	85-87
	CORRELATE	
47-1	WHOLE NUMBER: DIVISION ESTIMATE	166-168
65-1	DECIMALS: ROUNDING	172-174
73-2	DECIMALS: ESTIMATE PRODUCT	184-186
74-1	DECIMAL × 10, 100, 1000	181-183
104-2	PROPORTION: WORD PROBLEM	169-171
104-3	PROPORTION: SCALE DRAWING	175-177
124-1	METRIC MEASUREMENT: AREA	178-180

APPENDIX G
LISTING OF RESOURCE MATERIALS[1] (1983)

I. MEAP

- **Explanatory**
  - *A. Questions and Answers About the Michigan Educational Assessment Program*
  - *B. Monograph #1: An Overview*
- **Using MEAP Results**
  - *C. Monograph #2: Identifying and Addressing Student Needs*
  - *D. Monograph #3: Identifying and Addressing Curriculum Needs*
- **Reporting MEAP Results**
  - *E. Monograph #4: Reporting Test Results to Parents*
  - *F. Film for use with parents: "Building Better Basics" — order directly from your Local Regional Educational Media Center (REMC)*
  - *G. Monograph #5: Reporting Test Results to the School Board*
  - *H. Monograph #6: Reporting Test Results to the Public*
- **Instructional Support Materials**
  - *+ Mathematics*
  - *I. Minimal Performance Objectives for Mathematics (1980)*
  - *J. Mathematics Education Interpretive Report: Grades 4-7-10: 1980-81*
  - *K. MEAP Support Materials for Mathematics*
  - *L. Whole Number Computation*
  - *M. Teacher Resource Guide for Metric Education*
  - *+ Reading*
  - *N. Minimal Performance Objectives for Communication Skills in Michigan (1980)*
  - *O. MEAP Support Materials for Reading*
  - *P. MEAP Secondary Support Materials for Reading*
  - *+ Other Essential Skill Areas (Information for other essential skill areas is also available. Such information typically includes performance objectives, testing materials, statewide results, interpretive reports, and, if developed, support materials.)*
  - *Q. Career Development*
  - *R. Health*
  - *S. Life Role Competencies*
  - *T. Listening*
  - *U. Physical Education*
  - *V. Science*
  - *W. Writing*
  - *X. Music*

II. Related Materials

- *Y. A Guide to Test Taking, As Easy as . . . 1-2-3*
- *Z. How to Pick a Good School*

[1]Materials available upon request from MEAP, P.O. Box 30008, Lansing, MI 48909. Quantities limited to one copy per item.